

RAILWAY AGE

THE STANDARD RAILROAD WEEKLY FOR ALMOST A CENTURY

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OF MICHIGAN

JULY 16, 1951

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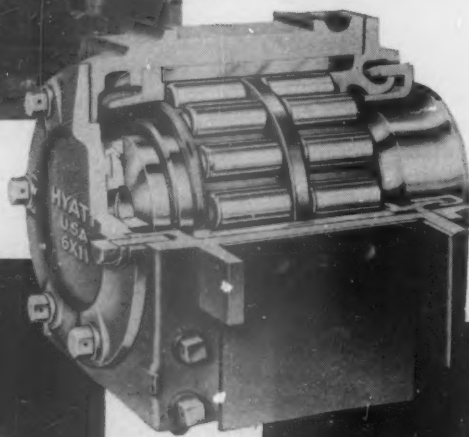
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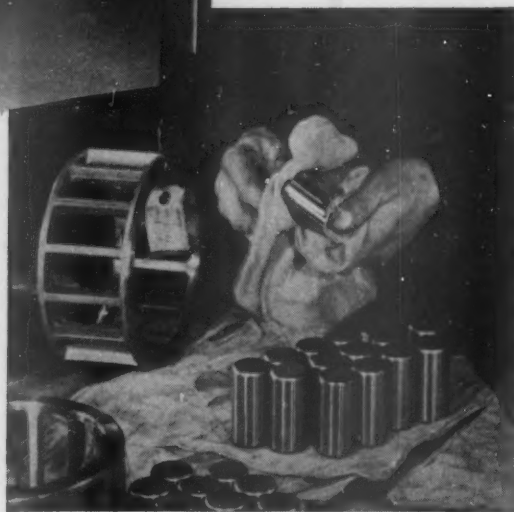
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special
tools!*



3. COMPLETE INSPECTION

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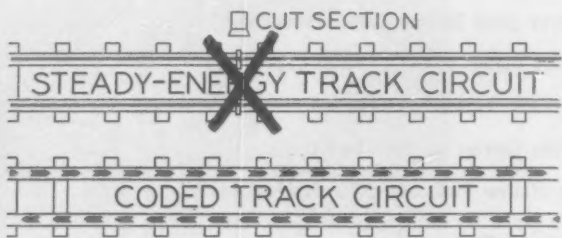


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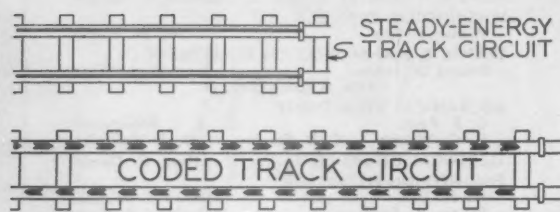
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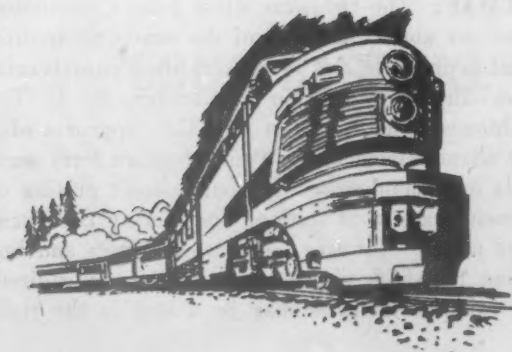
NEW YORK CHICAGO

ST. LOUIS SAN FRANCISCO

WEEK AT A GLANCE

CURRENT RAILWAY STATISTICS

Operating revenues, five months	
1951	\$ 4,180,123,254
1950	3,444,524,886
Operating expenses, five months	
1951	\$ 3,297,621,471
1950	2,765,378,614
Taxes, five months	
1951	\$ 476,980,422
1950	353,765,743
Net railway operating income, five months	
1951	\$ 321,485,648
1950	253,110,891
Net income, estimated, five months	
1951	\$ 197,000,000
1950	133,000,000
Average price railroad stocks	
July 10, 1951	50.25
July 11, 1950	40.65
Car loadings, revenue freight	
26 weeks, 1951	19,917,404
26 weeks, 1950	17,884,750
Average daily freight car surplus	
Week ended July 7, 1951	39,526
Week ended July 8, 1950	23,840
Average daily freight car shortage	
Week ended July 7, 1951	6,065
Week ended July 8, 1950	13,891
Freight cars delivered	
June 1951	9,644
June 1950	3,874
Freight cars on order	
July 1, 1951	147,725
July 1, 1950	40,585
Freight cars held for repairs	
June 1, 1951	94,038
June 1, 1950	133,936
Average freight car turn-around time, days	
May, 1951	14.78
May, 1950	15.34
Average number railroad employees	
Mid-May 1951	1,291,172
Mid-May 1950	1,135,064



In This Issue . . .

UPS AND DOWNS: With the railroads arguing before the I.C.C., and against strong opposition, for a needed rate increase, it's highly pertinent to note that exactly half of the country's largest Class I railroads—61 out of 123—had smaller net railway operating income in May 1951 than in May 1950. In May 1951, of course, even though traffic was higher, higher wages and other costs which are the basis for the roads' rate-increase plea were also largely in effect. But important rate increases were only "pending." The detailed figures of revenues, expenses, taxes and net are plain for all to see, on pages 20, 22, 24 and 26.

GET 'EM WHILE THEY'RE YOUNG! Judging from the pictures on pages 52 and 53, "Railroad Month" was a huge success for a lot of the country's 830,000 Cub Scouts. Why not, asks a page 30 editorial, continue the good work by making the "month" a regular event, to give future Cubs, too, a chance to satisfy the interest which railroading still seems to hold for small boys — even in an air-borne and rubber-tired age.

HALF CENTURY OF SERVICE: On page 56 is a brief description of the organization and activities of the Southern Weighing and Inspection Bureau, which is completing this month 50 years of service to southern railroads and shippers.

SUBURBAN HEADACHE: Pointing out that increasing diversion of commuter travel from unsubsidized (and unprofitable) rail lines to heavily subsidized highways is increasing New York City traffic congestion "out of all proportion" to the number of people transported, the Regional Plan Association has asked for an "objective study" of the whole metropolitan area suburban transportation problem. Meantime, the seriousness of the situation from the railroad standpoint has been pointed up by applications for commuter fare increases filed by railroads serving New York and other big eastern cities. Both developments are reported in the news.

OBJECT LESSON: As this issue of *Railway Age* went to press, New York newspapers were giving front-page headlines to a July 11 fire on the Pennsylvania's Hackensack River drawbridge, over which pass all the P.R.R.'s main-line trains between New York and the South and West. Just for the record, as our news report of the incident states, rail service was quickly restored; true to the best traditions of railroading, track gangs were replacing burned out ties and laying new rails even before the fire was fully extinguished. But by a strange

WEEK AT A GLANCE

coincidence, the leading feature article in this issue (page 38) is a description of a new low-cost fire-protective coating which has been applied with considerable success to a number of railroad bridges. The article was selected several days ago, with no psychic fore-knowledge of the Hackensack River fire — and certainly with no thought of putting any hex on the P.R.R. It isn't often that there develops such a close correlation between pre-chosen articles and factual events. We must be living right!

LOOK BEHIND THE FIGURES: A number of truck operators have recently adopted the practice of painting on their trucks figures which purport to show the "taxes" paid on each vehicle. Such figures, of course, are based on the typical truck operator's usual loose definition of "taxes," and there's good reason to believe that they are frequently inflated, even on that basis. What the figures don't show, either, is that average net annual return per vehicle may be two or three times the "taxes" allegedly paid on it. For a brief analysis of this Kremlesque propaganda scheme, see page 47.

NEWS HIGHLIGHTS: June freight car deliveries, at 9,644, indicate substantial achievement, for second consecutive month, of 10,000-car goal.—S.P. doing \$7.6 million of construction work.—Long Island Transit Authority organized.—John Draney dies at 90.—Freight roller-bearing development to be speeded up.—Canadian rate increase to be re-examined in fall.—A.A.R. Mechanical and P.&S. Divisions may meet in Atlantic City in 1953.—Severe floods hit Santa Fe, Rock Island, Missouri Pacific and U.P.



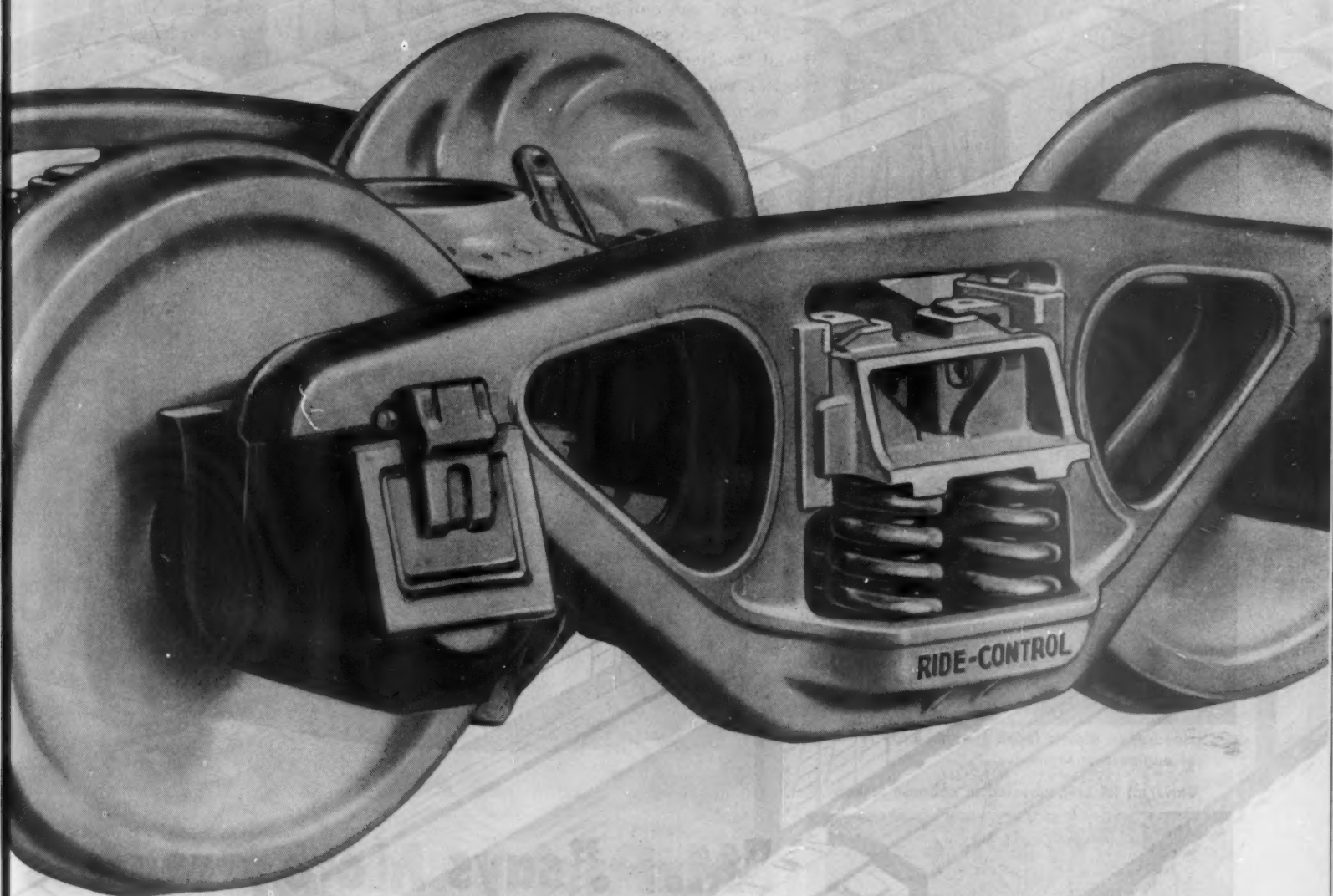
"THE ISSUE HERE is whether the railroads of this country are to be permitted to earn sufficient revenue to provide the kind of volume transportation the nation needs," E. H. Burgess, vice-president and general counsel of the B.&O., told the I.C.C. in leading off oral argument for the railroads in the Ex Parte 175 rate increase case at Washington last week. Details of his and other railroad and opposition arguments are reported on page 31, while the economic background of the case is discussed in a page 29 editorial.

In Washington . . .

STRIKE VOTE: Aside from oral argument in the Ex Parte 175 case the biggest railroad news originating in Washington last week was the B. of L. F. & E.'s decision to take a strike vote as a maneuver to enforce its wage and rule demands. Otherwise, things were fairly quiet along the Potomac. The A.A.R. and the F.R.P. joined in asking for separation of air-mail pay from air-line subsidies—to be followed by complete termination of the latter. The Express Agency asked a little more interim rate relief, and the National Production Authority issued a report to the effect that lack of materials is delaying diesel locomotive production.


. . . And Elsewhere

ONE-THIRD OF A LOAF: The Delaware River Joint Commission has reportedly agreed to pay about one-third of the nearly \$1 million which would be required to improve and modernize the Pennsylvania-Reading Seashore Lines' Broadway Station in Camden, N. J. The project, still tentative, hinges at least in part on I.C.C. approval of a pending application for abandonment of the Pennsylvania's ferry service between Philadelphia and Camden, which would permit closing of the Seashore Lines' present waterfront station. Considering the extent to which city streets are used — for free — as truck depots and bus terminals, and the extent to which airports are publicly subsidized, this sharing of cost of railroad facilities may be a step in the right direction.



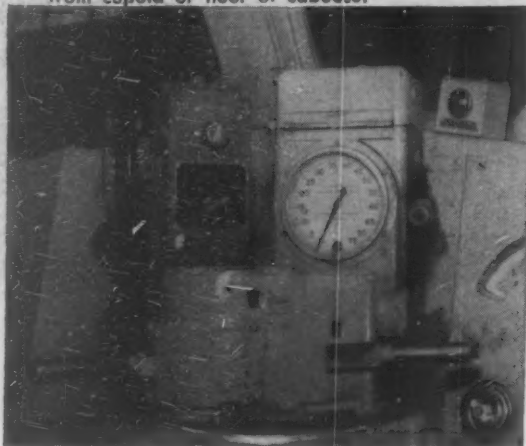
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TRUCKS THAN ALL OTHER TRUCKS COMBINED
...BECAUSE RIDE-CONTROL IS SMOOTH-RIDING,
LONG-LASTING—CUTS OPERATING COSTS!

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Handset in diesels located within easy reach of engineer or fireman.

Universal RR unit mounted in caboose locker.

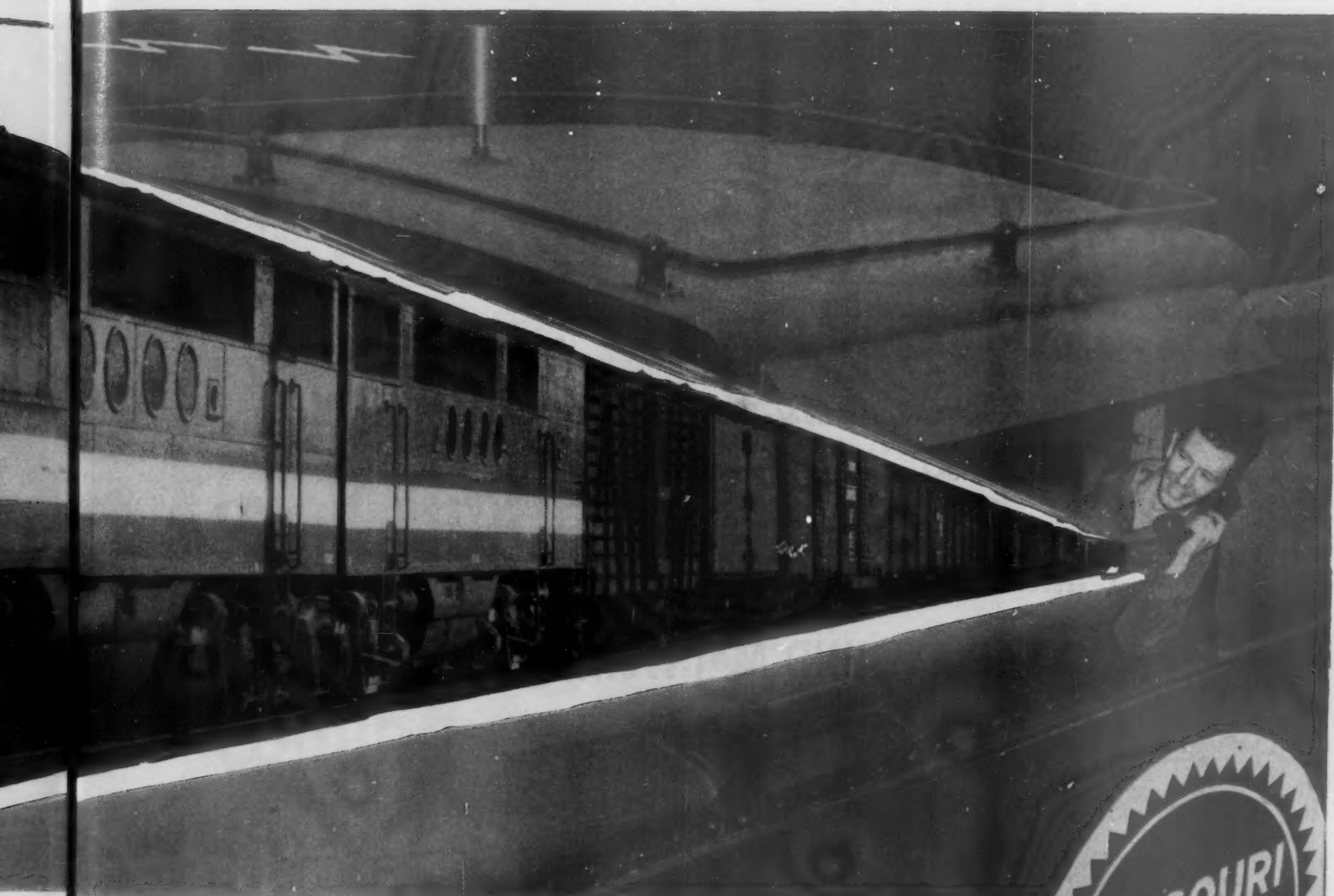


"M.P." says More Progress

One of the largest railroad radio systems covering over 3500 miles of main line and encompassing 337 locomotives, 322 cabooses and 13 business cars will be completed on the Missouri Pacific this year. The end-to-end and train-to-train facilities provided by this equipment will be augmented by twenty base stations in terminal and wayside applications. Rapid extension of the wayside facilities is contemplated.

All Diesel units will be equipped by radio as they are brought into service since the management has recognized the great importance of this "modern tool of communication."

Motorola



ss with **Motorola Performance**

The choice of Motorola Railroad Radio by the Missouri Pacific was based on its universal application, low cost maintenance, and excellent performance handling messages between engine, caboose or wayside station. This deluxe Sensicon universal unit with 8 exclusive Motorola developments has proved its superiority and low yearly cost on the MoPac and on 22 of America's finest and largest railroads.

The same transmitters and receivers are found in all three applications even though the diesel primary source is the diesel battery supplying 117V AC through a converter and the caboose primary source is 12V DC. The Motorola Universal operates directly from this 12V DC source.

Motorola features single authority integrated design to meet the customers requirements for radio, supervisory control, telemetering, AF and RF carrier and microwave relay systems.

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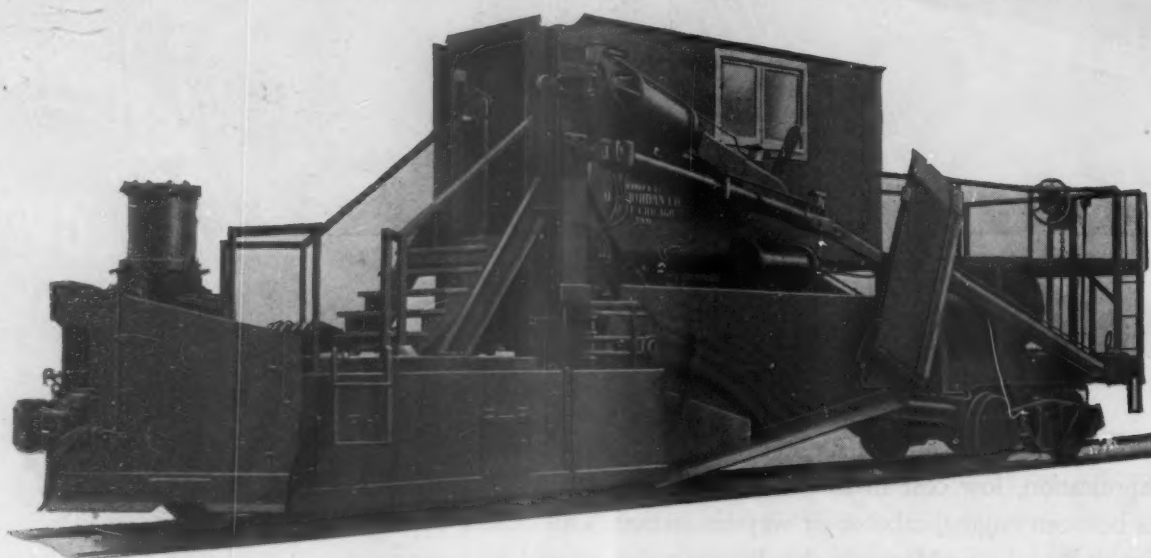


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During season it spreads, ditches, plows and shapes ballast, profiles roadbed, spreads fill and carries dirt. During the winter the Jordan Road-Master flanges and bucks snow in one operation . . . in classification yards, on open track and in deep cuts. Rips out ice and packed snow below the top of the rail too. To learn more about this year-around maintenance crew, write to O. F. Jordan Company, Walter J. Riley, Chairman of the Board, East Chicago, Ind.

Where in the world is all the coal coming from?



Today, the call is for more coal—still more coal—to make all the steel and the thousands of other things that go into ships and tanks and planes. And that's on top of all the coal used for power—by the railroads and utilities—in the factories—and for home heating. And remember, nearly 18,000,000 homes, more than half the homes in the country, depend on coal for heat. *Will there be enough to go around?*

The answer is YES, enough for every need—for this country's coal companies have led America to first place in world coal production—*three times* that of any other country.

America's leadership in coal is no accident. 92% of America's total fuel reserves are in coal. And progressive coal companies have equipped the U. S. miner with the world's most efficient mine machinery. Thus the American miner, today, has a daily output *4 to 24 times* as great as that of any miner in Europe or Asia.

Out of today's giant preparation plants comes better coal. Fortunately, too, coal burning equipment has been greatly improved, so that one ton of this better coal, used under the

more efficient modern boiler, yields as much energy as did three tons—a relatively few years ago!

America's leadership in coal production is a direct result of free competition. The operators of this country's 9,000 privately owned coal mines have had to keep up with each other in efficiency or go out of business. In their competitive effort, the coal companies have invested hundreds of millions of dollars in research—in modern mining equipment and in developing new mine properties!

America's privately managed coal companies are doing a production job that no government-owned or dominated coal industry, anywhere, can begin to match!

BITUMINOUS COAL INSTITUTE

A DEPARTMENT OF NATIONAL COAL ASSOCIATION

WASHINGTON, D. C.

FOR NATIONAL DEFENSE  FOR PEACETIME PROGRESS

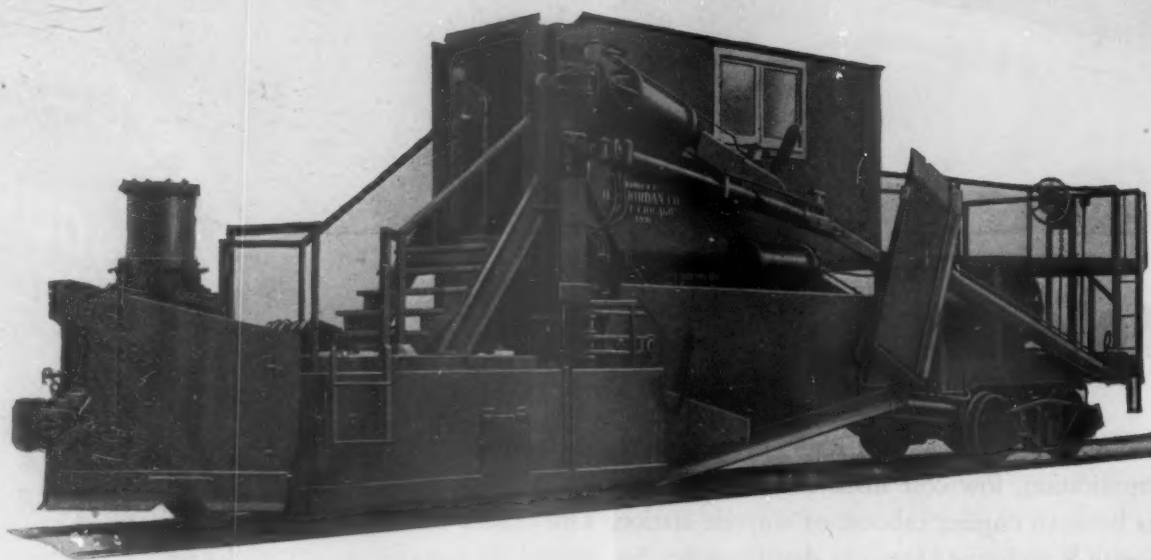
YOU CAN COUNT ON COAL!

THE NEW JORDAN **Road-Master**

SPREADER • DITCHER • SNOWPLOW
Does the Work of an Army of Men

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A DEPARTMENT OF NATIONAL COAL ASSOCIATION

WASHINGTON, D. C.

FOR NATIONAL DEFENSE  FOR PEACETIME PROGRESS

YOU CAN COUNT ON COAL!

You'll get **SPEEDIER ERECTION
... BETTER SERVICE**



with
**Amcreco
Creosoted
FRAMED
BRIDGE
TIMBERS**

Adzed and
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Bridge Ties
Piles
Timbers

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...started more than 10 years ago

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By increasing output with maximum speed and drawing on reserve stocks of nickel previously accumulated, they helped raise deliveries of nickel in all forms during 1950 to 256,000,000 pounds ... a record for any peace-time year.

This record, 22% greater than the 209,292,257 pounds delivered in 1949, was no accident ...

In 1937, INCO launched a vast long-range project which now makes it possible to meet the military requirements

of the United States, Canada and the United Kingdom. In addition, nickel deliveries are being made to government stockpiles and the balance of the supply is being rationed among civilian consumers in all markets throughout the free world.

Since the inception of International Nickel, its fixed policy has always been to increase the supply of nickel. To meet today's needs, INCO went underground years ago.

Anticipating the eventual depletion of Frood-Stobie open pit surface ores, more than 10 years ago, INCO embarked on a program of replacing open pit with underground capacity. This required extensive enlargement of underground plants, development of new methods of mining not previously undertaken and the revamping of metallurgical processes to cope with difficulties in recovering nickel from

the new types and lower grades of ores which have to be reached.

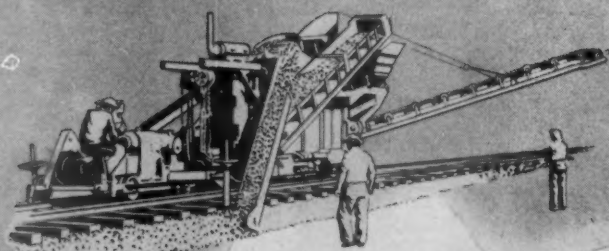
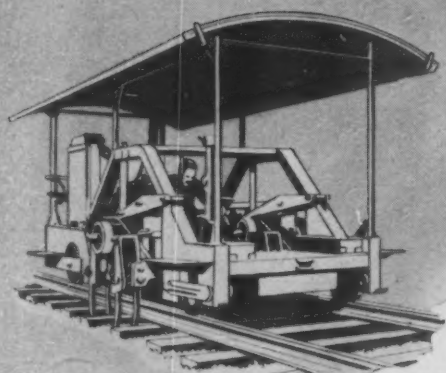
Major expansion in output of nickel from underground operations is being driven to conclusion with utmost speed. There is still much construction to be done and a number of mining and metallurgical problems remain to be solved and tested in actual operation. Barring unforeseen interruptions, full conversion to underground mining should be completed in 1953.

When the present undertaking is completed, INCO will be able to hoist 13,000,000 tons annually, and the size of its underground mining operation will surpass that of any other non-ferrous base metal mining operation in the world.

This underground expansion is being completed by INCO without interrupting current production of nickel, which is at maximum capacity.

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Long-run payoff on your trackwork equipment is how great a percentage of working availability you get from each machine. With Matisa equipment, you have two important factors that produce maximum equipment availability to keep ahead of trackwork schedules:

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Matisa Automatic Tampers and Matisa Ballast Cleaners are without the "bugs" and "weak links" that frequently cause delays out of all proportion to their structural importance . . . And being structurally designed for continuous performance, both machines offer a degree of dependability we believe is unequalled in trackwork equipment now available.

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they couldn't be Finer!*

use *genuine* **BALDWIN DIESEL PARTS**

BALDWIN DIESEL CRANKSHAFTS offer special design features that improve performance and extend life—and each is dynamically balanced to close limits, to reduce vibration and make the power-flow smooth as cream. Service on these and other Baldwin Diesel Parts is handled from seven conveniently-located warehouses, geared for immediate handling of your needs.



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AND METALS

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coming *and* going

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of every available
worn chilled wheel
to your AMCCW plant
means greater assurance
of new wheels
when you want them



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REVENUES AND EXPENSES OF RAILWAYS

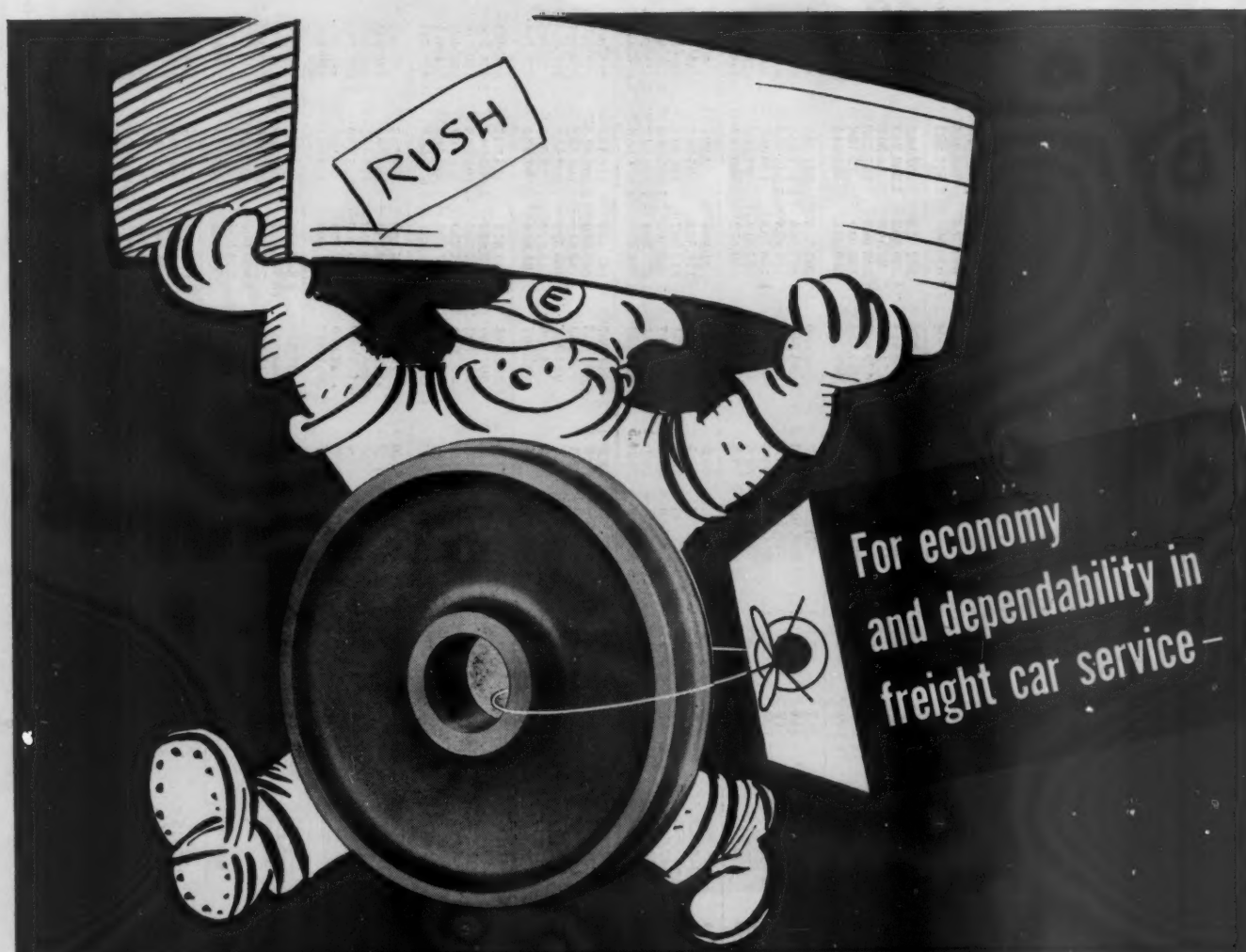
MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1951

Name of road	Av. mileage operated during period	Operating revenues				Operating expenses				Operating ratio	Net from railway operation	Net railway operating income	
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Equipment	Traffic	Trans- portation	Total			Railway tax accruals	1951
Akron, Canton & Youngstown.....	May 171	467,059	483,874	950,933	69,464	53,161	33,508	138,476	324,424	67.0	159,450	71,319	65,285
Atchison, Topeka & Santa Fe System.....	5 mos. 171	2,227,975	2,312,916	4,540,891	334,337	9,368,221	164,617	687,170	1,570,017	67.9	742,899	332,004	337,461
Atchison, Topeka & Santa Fe System.....	May 13,096	39,365,556	47,625,900	86,991,456	7,899,510	3,362,221	1,168,193	15,926,061	36,304,955	75.9	11,521,435	6,662,526	4,369,293
Atlanta & St. Andrews Bay.....	5 mos. 82	193,128,560	20,114,993	213,243,553	34,282,930	45,320,033	5,776,496	75,929,004	170,601,797	73.9	60,284,233	34,558,726	24,809,192
Atlanta & St. Andrews Bay.....	May 82	306,354,844	2,086	306,356,930	42,965	19,531	8,377	63,738	170,483	46.2	170,483	92,558	52,253
Atlanta & St. Andrews Bay.....	5 mos. 82	1,486,668	9,897	1,496,565	179,622	97,657	40,105	299,576	686,704	45.9	808,674	237,291	254,551
Atlanta & West Point.....	May 93	308,142	395,713	703,855	57,467	53,298	16,092	175,990	328,664	83.1	67,049	38,406	13,629
Atlanta & West Point.....	5 mos. 93	1,457,643	240,596	1,698,239	257,122	275,768	77,995	838,353	1,572,730	82.5	334,190	175,210	61,088
Western of Alabama.....	May 133	322,653	43,563	366,216	57,987	59,501	16,126	146,961	304,667	76.9	91,422	52,687	33,483
Atlantic & Danville.....	5 mos. 133	1,602,340	235,942	1,838,282	304,742	304,742	79,332	725,101	1,521,722	76.7	461,628	239,401	171,500
Atlantic & Danville.....	May 205	153,494	155,717	309,211	10,538	15,597	51,072	266,433	563,716	73.7	37,137	10,787	1,806
Atlantic & Danville.....	5 mos. 205	750,065	765,366	1,515,431	28,000	47,904	51,072	266,433	563,716	73.7	201,650	72,390	34,805
Atlantic Coast Line.....	May 5,543	11,416,782	1,303,681	12,720,463	2,619,331	2,683,393	324,342	5,197,543	11,389,380	83.9	2,187,218	1,200,000	618,624
Atlantic Coast Line.....	5 mos. 5,543	55,056,661	9,437,132	64,493,793	15,025,244	12,986,038	1,675,556	25,718,565	58,454,337	84.3	10,811,136	6,222,000	2,588,297
Charleston & Western Carolina.....	May 343	577,855	12,889	590,744	91,920	91,920	40,917	84,160	205,763	75.6	144,557	310,000	64,905
Charleston & Western Carolina.....	5 mos. 343	2,600,098	52,902	2,653,000	682,425	404,917	84,160	824,468	3,125,707	81.7	7,157,037	2,873,292	305,035
Baltimore & Ohio.....	May 6,188	34,325,084	2,238,159	36,563,243	5,238,307	8,727,176	4,138,988	74,173,724	150,410,822	83.1	30,707,039	12,379,126	13,964,625
Baltimore & Ohio.....	5 mos. 6,188	160,471,619	10,268,772	170,740,391	23,200,482	41,635,021	90,571	2,412,702	6,642,883	66.3	3,377,357	2,499,655	2,092,685
State Inland Rapid Transit.....	May 29	230,613	49,754	280,367	55,895	409,89	1,414	137,131	963,557	92.0	22,975	35,429	24,072
State Inland Rapid Transit.....	5 mos. 29	1,180,707	234,919	1,415,626	264,226	187,398	1,414	137,131	963,557	92.0	22,975	35,429	24,072
Bangor & Aroostook.....	May 602	938,258	26,707	964,965	189,023	216,339	15,185	267,049	755,051	75.4	246,434	142,806	127,439
Bangor & Aroostook.....	5 mos. 602	5,002,899	169,133	5,172,032	883,748	897,683	68,046	1,326,431	3,486,572	65.1	1,865,931	921,911	803,902
Bessemer & Lake Erie.....	May 212	3,194,053	977	3,195,030	200,138	369,628	17,514	38,613	1,960,743	39.1	1,326,431	214,871	946,467
Bessemer & Lake Erie.....	5 mos. 212	9,895,730	4,500	10,020,230	277,965	2,850,036	90,571	2,412,702	6,642,883	66.3	3,377,357	2,499,655	2,092,685
Boston & Maine.....	May 1,702	6,100,658	824,776	6,925,434	1,346,413	1,225,139	121,102	3,179,870	6,189,728	81.3	1,426,444	650,239	418,233
Boston & Maine.....	5 mos. 1,702	28,844,921	4,476,251	33,321,172	6,209,113	6,092,123	561,769	15,320,961	30,276,574	82.8	6,362,814	3,071,866	1,413,160
Cambria & Indiana.....	May 35	103,612	.....	103,612	16,010	68,453	643	134,774	115,156	111.1	11,508	58,744	49,781
Cambria & Indiana.....	5 mos. 35	687,155	.....	687,155	64,651	409,144	134,774	23,868	652,414	94.9	34,916	334,097	295,756
Canadian Pacific Lines in Maine.....	May 234	340,450	209,778	550,228	81,238	126,567	7,095	178,981	405,006	99.1	27,142	72,380	180,415
Canadian Pacific Lines in Maine.....	5 mos. 234	3,078,091	2,277,852	5,355,943	480,598	456,470	35,042	1,168,068	2,201,139	64.5	1,212,343	138,786	743,808
Canadian Pacific Lines in Vermont.....	May 90	209,775	10,536	220,311	62,940	49,953	5,902	122,240	248,050	104.0	9,597	12,577	81,252
Canadian Pacific Lines in Vermont.....	5 mos. 90	969,678	63,454	1,033,132	238,453	166,308	28,979	2,473,199	1,069,990	95.4	51,491	61,166	288,426
Central of Georgia.....	May 1,815	3,195,055	341,336	3,536,391	734,724	664,704	17,889	1,708,036	3,424,093	89.5	402,599	238,036	122,471
Central of Georgia.....	5 mos. 1,815	16,079,119	1,374,575	17,453,694	3,462,932	3,171,022	8,120,731	16,319,731	34,240,931	86.8	2,479,774	1,402,798	641,916
Central of New Jersey.....	May 410	2,881,884	517,231	3,399,115	594,844	594,844	59,527	1,896,929	3,388,769	90.0	3,388,769	397,898	363,132
Central of New Jersey.....	5 mos. 410	14,120,664	2,277,852	16,398,516	2,352,506	3,072,852	278,878	9,356,197	15,856,107	90.0	1,768,909	1,976,507	2,005,402
Central of Pennsylvania.....	May 210	1,633,936	4,950	1,638,886	148,374	371,028	26,970	498,469	1,086,730	64.5	598,114	93,784	791,388
Central of Pennsylvania.....	5 mos. 210	7,492,785	33,465	7,526,250	817,915	1,940,160	125,227	2,473,199	5,560,436	72.0	2,162,141	363,067	3,256,947
Central of Vermont.....	May 422	4,661,000	255,000	4,916,000	700,953	806,712	17,189	3,955,776	864,774	83.7	165,226	45,154	89,861
Chesapeake & Ohio.....	May 5,116	29,620,972	758,060	30,379,032	4,080,708	6,747,810	566,243	10,305,045	22,875,687	71.7	9,016,172	4,932,088	4,336,018
Chesapeake & Ohio.....	5 mos. 5,116	134,324,333	3,549,923	137,874,256	19,230,960	28,470,958	2,778,131	49,169,125	105,358,824	73.3	38,412,970	22,956,428	17,513,970
Chicago & Eastern Illinois.....	May 886	2,273,233	284,316	2,557,549	395,453	451,748	112,081	1,050,299	2,156,598	76.6	659,753	284,000	297,259
Chicago & Eastern Illinois.....	5 mos. 886	11,129,876	1,318,391	12,448,267	1,793,049	2,092,360	549,438	5,208,856	10,391,823	75.8	3,311,538	1,352,600	1,972,536
Chicago & Illinois Midland.....	May 130	812,884	229	813,113	101,013	183,184	26,180	218,841	569,749	69.0	255,667	140,248	72,929
Chicago & Illinois Midland.....	5 mos. 130	3,906,332	1,046	3,907,378	497,722	815,907	140,014	1,079,747	2,723,965	68.4	1,255,982	641,301	704,318
Chicago & North Western.....	May 7,913	13,876,927	1,708,652	15,585,579	2,878,342	3,419,649	358,722	8,024,873	15,518,499	90.5	7,601,670	5,255,537	125,739
Chicago & North Western.....	5 mos. 7,913	63,297,649	8,325,949	71,623,598	12,384,497	15,687,418	1,629,060	38,880,055	72,438,881	90.7	3,300,231	2,953,021	1,848,434
Chicago, Burlington & Quincy.....	May 8,822	91,129,694	6,770,025	97,900,719	14,048,816	3,064,926	470,474	7,769,579	16,118,598	75.3	5,302,236	16,617,045	13,437,462
Chicago, Burlington & Quincy.....	5 mos. 8,822	477,733,535	27,199,229	504,932,764	56,412,22	43,348,96	100,149	934,834	2,116,963	69.3	32,932,26	276,513	289,915
Chicago Great Western.....	May 1,474	13,398,877	141,382	13,540,259	2,281,869	2,053,986	503,828	4,802,184	10,041,623	71.7	4,309,309	1,353,105	1,367,765
Chicago Great Western.....	5 mos. 1,474	1,560,446	81,122	1,641,568	1,512,981	1,407,967	93,496	649,065	1,461,534	83.5	289,541	100,067	101,763
Chicago, Indianapolis & Louisville.....	May 541	7,887,739	404,317	8,292,056	812,304	1,407,967	3,115,206	6,978,580	10,333,724	79.2	1,833,724	660,499	621,152
Chicago, Indianapolis & Louisville.....	5 mos. 541	18,601,780	1,489,958	20,091,738	3,504,146	4,707,289	462,563	9,344,430	19,072,251	85.6	3,208,606	1,799,000	902,467
Chicago, Milwaukee, St. Paul & Pacific.....	May 10,671	87,488,232	7,055,597	94,543,829	13,747,795	21,921,154	2,234,873	46,507,503	80,855,006	85.6	15,010,205	8,251,000	6,759,205
Chicago, Milwaukee, St. Paul & Pacific.....	5 mos. 10,671	437,863,612	36,625,625	474,489,237	2,415,383	2,641,241	471,208	9,344,430	12,934,346	76.9	3,887,223	1,795,446	1,335,782
Chicago, Rock Island & Pacific.....	May 7,925	68,488,484	8,353,010	76,841,494	9,969,242	13,246,424	2,363,095	32,889,209	62,387,919	74.6	21,247,111	9,530,494	7,286,070
Chicago, Rock Island & Pacific.....	5 mos. 7,925	2,288,484	167,222	2,455,706	2,667,013	471,947	61,084	4,407,227	2,584,188	96.9	82,825	184,771	275,448
Chicago, St. Paul, Minn. & Omaha.....	May 1,617	11,059,367	871,913	12,931,280	2,109,517	2,240,758	7,423,598	12,722,060	12,722,060	98.1	241,063	910,542	1,579,864
Chicago, St. Paul, Minn. & Omaha.....	5 mos. 1,617	2,004,863	1,147	2,006,010	334,777	333,907	486,613	496,628	1,228,082	61.0	786,613	192,020	709,651
Clintchfield.....	May 317	10,125,416	6,003	10,131,419	1,413,693	1,625,575	195,086	2,248,660	5,647,506	55.5	4,543,807	949,324	4,264,672
Clintchfield.....	5 mos. 317	2,004,863	1,147	2,006,010	334,777	333,907	486,613	496,628	1,228,082	61.0	786,613	192,020	709,651

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July 16, 1951

RAILWAY AGE



Edgewater

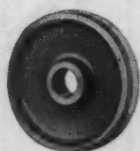
Rolled Steel Wheels

Single wear wheels rolled from special steel made in our own plant

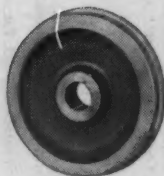
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Edgewater Steel Company

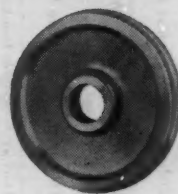
Makers of



Freight Car



Passenger Car



and Diesel Locomotive
Rolled Steel Wheels

REVENUES AND EXPENSES OF RAILWAYS

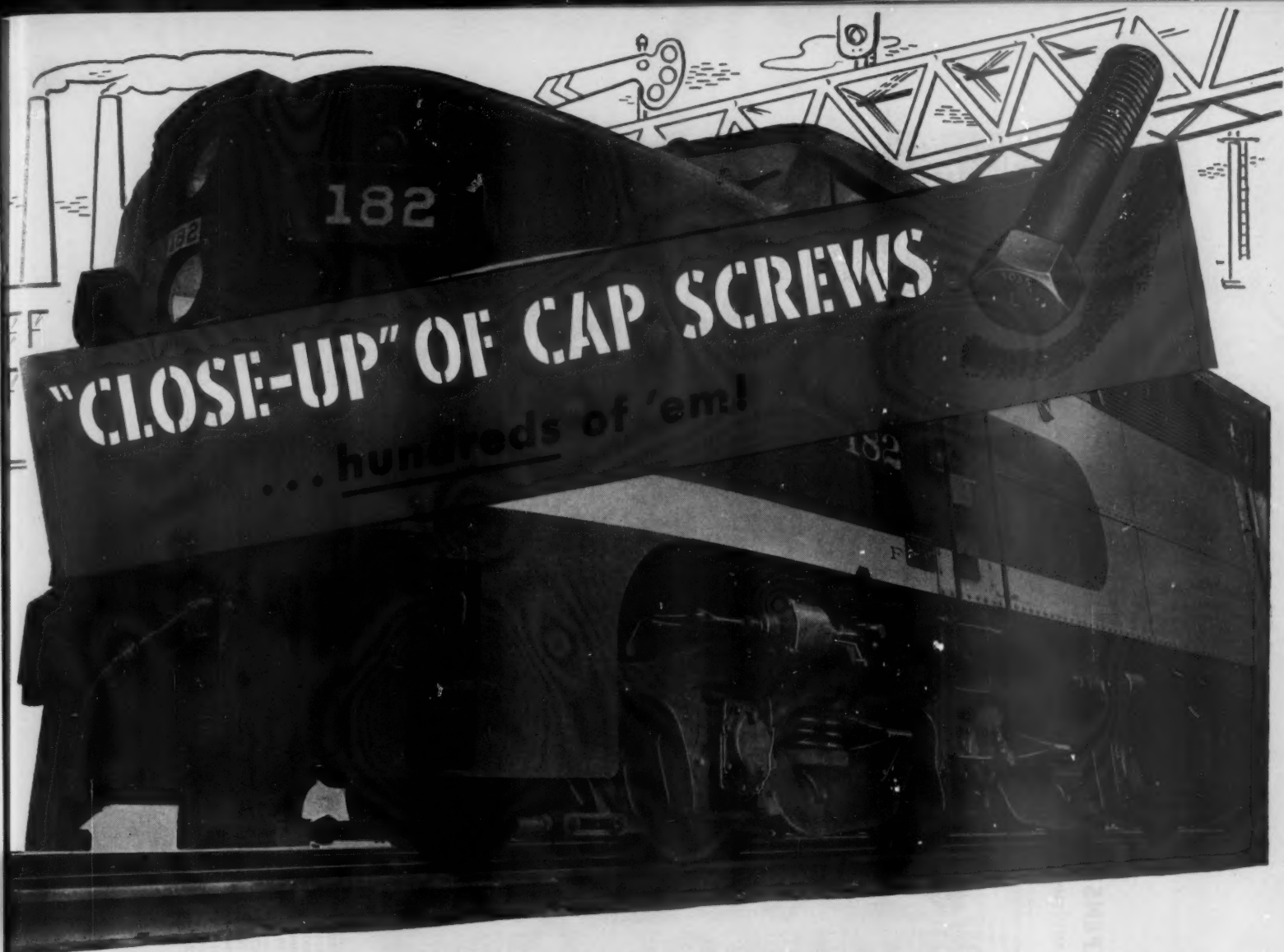
MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1951

Name of road	Av. mileage operated during period	Operating revenues				Operating expenses				Operating ratio	Net from railway operation	Net railway operating income	
		Freight	Passenger	Total (inc. misc.)	Way and structures	Maintenance of equipment	Traffic	Transportation	Total			Railway tax accruals	1951
Colorado & Southern.....	739	991,219	67,404	1,149,359	143,918	219,000	26,379	497,511	940,461	81.8	208,898	38,336	36,355
Colorado & Southern.....	5 mos.	5,273,751	406,924	6,162,625	967,329	1,430,619	133,866	2,939,619	4,468,082	72.5	1,694,543	520,095	332,098
Ft. Worth & Denver City.....	804	1,301,585	140,078	1,589,289	363,267	1,199,429	54,551	602,668	1,364,131	85.8	225,158	52,912	27,950
Ft. Worth & Denver City.....	5 mos.	7,923,660	761,216	8,515,924	1,280,756	33,028	1,199,429	3,212,261	6,316,308	79.1	2,099,827	699,291	1,143,438
Colorado & Wyoming.....	471	1,549,551	277,497	2,127,048	126,979	1,35,467	1,674	158,066	331,791	119.5	-54,294	-55,683	-54,304
Colorado & Wyoming.....	5 mos.	7,333,933	1,347,532	8,681,465	281,231	135,467	6,049	598,304	1,079,495	80.1	268,037	121,223	119,432
Columbus & Greenville.....	168	166,888	172,871	339,759	47,415	35,263	3,831	61,230	155,753	90.1	17,118	17,545	17,545
Columbus & Greenville.....	5 mos.	894,926	914,390	1,809,316	211,146	149,181	17,483	264,893	435,930	79.9	183,353	119,878	85,346
Delaware & Hudson.....	793	2,059,433	113,987	2,173,420	861,819	1,107,562	84,414	1,913,430	3,020,991	76.6	541,641	615,486	609,705
Delaware & Hudson.....	5 mos.	10,529,279	702,518	11,231,797	3,017,823	4,983,619	385,019	9,266,270	18,650,785	78.4	3,771,792	3,287,567	2,011,920
Delaware, Lackawanna & Western.....	965	29,448,435	7,940,018	36,388,453	3,839,013	6,950,341	181,295	3,409,393	6,316,308	81.7	6,629,434	899,760	782,822
Denver & Rio Grande Western.....	2,334	5,622,741	285,671	6,115,974	994,560	1,056,569	170,765	1,991,451	4,500,495	73.6	1,615,479	882,924	597,520
Denver & Rio Grande Western.....	5 mos.	27,072,658	1,384,488	28,457,146	3,479,620	5,431,008	815,665	9,723,888	20,803,811	70.5	8,688,414	4,539,862	2,517,082
Detroit & Mackinac.....	232	250,478	937	251,415	40,000	23,115	3,904	34,930	110,390	42.2	151,306	82,198	50,007
Detroit & Mackinac.....	5 mos.	1,301,585	140,078	1,589,289	363,267	1,199,429	54,551	602,668	1,364,131	85.8	225,158	52,912	27,950
Detroit & Toledo Shore Line.....	50	632,657	937	633,594	69,303	60,134	4,453	223,905	381,409	59.9	253,224	102,049	120,194
Detroit & Toledo Shore Line.....	5 mos.	3,329,727	3,346,785	6,676,512	354,322	285,311	70,559	1,073,040	1,847,066	55.2	1,499,719	610,435	540,692
Detroit, Toledo & Ironton.....	464	1,444,507	447	1,525,910	230,224	294,145	28,293	427,811	955,230	62.7	568,680	287,375	237,480
Detroit, Toledo & Ironton.....	5 mos.	7,952,208	1,921	8,315,107	1,008,078	1,241,472	13,514	2,180,157	4,310,403	57.4	3,505,304	1,807,204	1,699,612
Duluth, Missabe & Iron Range.....	565	6,327,353	1,232	6,328,585	3,653,636	3,499,067	42,779	5,630,011	12,573,462	93.2	913,130	1,304,753	2,846,577
Duluth, Missabe & Iron Range.....	5 mos.	11,830,171	6,325	11,836,496	3,653,636	3,499,067	42,779	5,630,011	12,573,462	93.2	913,130	1,304,753	2,846,577
Duluth, South Shore & Atlantic.....	539	679,195	34,355	713,550	1,526	122,903	22,903	273,958	584,348	86.7	140,658	37,762	26,313
Duluth, South Shore & Atlantic.....	5 mos.	3,190,832	34,351	3,335,183	533,158	576,756	107,187	1,363,999	2,669,256	79.5	690,138	130,672	144,867
Duluth, Winnipeg & Pacific.....	175	394,000	800	400,200	76,994	61,609	4,896	172,232	323,550	80.8	76,650	31,899	3,702
Duluth, Winnipeg & Pacific.....	5 mos.	2,267,000	3,900	2,300,200	333,353	318,023	22,720	958,699	1,665,573	72.4	634,627	171,523	185,702
Elgin, Joliet & Eastern.....	238	1,737,644	36	1,737,680	502,138	654,678	30,370	1,719,910	3,075,740	63.5	1,765,391	812,987	829,626
Elgin, Joliet & Eastern.....	5 mos.	8,555,660	554,586	9,110,246	2,068,170	3,347,078	155,105	8,006,865	14,308,968	64.5	3,843,396	3,483,996	3,736,616
Erie.....	2,245	65,724,263	2,844,566	68,568,829	8,826,105	11,547,979	1,733,203	30,267,402	55,742,449	79.1	17,621,748	8,354,450	6,896,235
Erie.....	5 mos.	323,533	369,209	692,742	287,672	432,278	70,032	1,055,173	2,039,482	73.2	747,907	161,449	219,794
Florida East Coast.....	571	10,413,979	3,613,287	15,356,935	1,711,969	2,281,744	348,242	5,450,559	10,753,580	70.3	4,603,351	1,298,218	2,176,917
Florida East Coast.....	5 mos.	52,732,202	55,723	52,787,925	840,691	1,333,577	327,237	3,279,237	6,499,489	77.3	191,292	40,642	154,287
Georgia Railroad.....	323	3,506,399	320,396	4,075,286	611,091	615,037	153,979	1,580,750	3,140,872	77.1	934,414	188,327	477,053
Georgia & Florida.....	359	287,393	23	294,944	91,348	34,915	18,031	82,782	240,246	81.5	54,696	16,673	26,703
Georgia & Florida.....	5 mos.	1,411,243	69	1,411,312	417,486	163,435	88,947	425,547	1,158,340	80.4	282,767	81,634	139,779
Grand Trunk Western.....	952	4,570,000	172,000	5,075,000	837,774	964,896	77,773	1,999,759	4,057,025	79.9	1,017,975	339,873	1,046,953
Grand Trunk Western.....	5 mos.	21,987,000	962,000	24,829,000	3,232,422	4,512,601	361,765	10,401,707	19,321,291	77.8	5,507,709	1,412,624	2,958,226
Canadian Natl. Lines in New Eng.....	172	180,000	3,600	183,600	57,513	51,175	2,684	136,773	265,223	117.9	-40,223	22,746	-102,283
Canadian Natl. Lines in New Eng.....	5 mos.	950,000	27,100	1,178,000	263,690	238,165	13,574	673,222	1,271,999	108.0	-93,999	113,730	-550,686
Great Northern.....	8,316	22,233,158	917,535	24,818,803	4,454,563	3,405,951	331,490	7,850,772	16,868,782	68.0	7,950,021	4,497,624	2,909,502
Great Northern.....	5 mos.	80,555,736	4,817,918	91,643,748	16,783,455	17,204,840	1,800,072	34,793,077	74,359,290	81.1	17,284,458	10,747,251	5,674,584
Green Bay & Western.....	224	323,533	.....	323,533	98,263	36,738	23,418	84,143	258,017	78.6	70,313	36,428	32,713
Green Bay & Western.....	5 mos.	1,738,477	.....	1,738,477	411,072	177,352	104,397	423,854	1,193,028	67.5	573,902	272,744	266,788
Gulf, Mobile & Ohio.....	2,898	6,684,891	391,677	7,565,299	1,293,275	1,528,974	259,042	2,278,646	5,698,801	75.3	1,866,498	858,053	676,195
Gulf, Mobile & Ohio.....	5 mos.	31,588,582	2,065,639	35,989,086	5,798,091	7,019,659	1,260,642	11,048,213	26,839,879	74.6	9,149,207	4,139,467	3,355,789
Illinois Terminal.....	462	864,289	81,011	1,062,823	161,445	147,677	37,239	1,987,217	3,871,948	80.1	961,547	501,499	372,571
Illinois Terminal.....	5 mos.	3,890,884	403,930	4,833,495	715,787	736,471	187,231	1,987,217	3,871,948	80.1	961,547	501,499	372,571
Illinois Central.....	6,539	19,482,056	1,802,119	23,473,565	4,197,122	4,230,911	505,139	9,028,202	19,022,036	81.0	4,451,529	2,508,618	1,842,219
Illinois Central.....	5 mos.	99,715,839	9,151,705	119,976,317	19,079,037	21,457,323	2,511,776	45,290,989	93,507,360	77.9	26,468,957	10,773,731	13,209,609
Kansas City Southern.....	891	3,362,218	124,247	3,754,298	409,597	509,049	84,781	1,118,263	2,239,289	59.7	1,515,009	732,000	543,902
Kansas City Southern.....	5 mos.	16,626,778	673,853	18,783,100	1,912,182	2,310,328	401,523	5,426,395	10,611,979	56.5	8,171,121	3,907,000	3,239,486
Kansas, Oklahoma & Gulf.....	327	558,405	602	564,605	80,546	38,289	20,498	129,856	291,838	51.7	272,767	134,054	43,554
Kansas, Oklahoma & Gulf.....	5 mos.	2,819,657	2,927	2,846,477	258,026	180,588	95,424	591,405	1,231,377	43.3	1,615,100	762,201	376,538
Lake Superior & Ishpeming.....	156	432,045	32	432,077	66,324	54,931	1,776	122,394	287,445	49.6	262,116	119,123	152,056
Lake Superior & Ishpeming.....	5 mos.	980,893	104	1,154,337	234,261	237,415	9,812	392,168	941,023	81.5	213,312	228,158	184,633
Lehigh & Hudson River.....	96	305,395	.....	305,395	45,394	24,576	11,932	92,981	134,763	56.6	134,763	78,198	42,408
Lehigh & Hudson River.....	5 mos.	1,372,167	.....	1,372,167	177,949	124,167	53,691	408,490	835,557	59.9	558,479	280,354	84,399
Lehigh & New England.....	191	740,456	.....	740,456	147,546	118,263	12,004	184,415	490,707	65.6	257,558	150,900	146,276
Lehigh & New England.....	5 mos.	3,356,544	.....	3,356,544	513,441	570,367	58,841	908,593	2,224,387	65.9	1,148,576	676,084	666,584
Lehigh Valley.....	1,223	6,323,562	280,135	6,883,492	929,431	1,302,711	143,952	2,636,184	5,248,527	76.2	1,634,965	799,977	769,721
Lehigh Valley.....	5 mos.	28,413,328	1,457,739	31,135,922	4,011,334	6,227,293	688,532	12,765,844	23,399,105	80.4	6,204,877	2,960,696	2,879,717
Long Island.....	365	1,069,101	2,499,045	3,568,146	4,536,186	675,750	11,582	11,678,994	19,802,879	96.2	2,116,719	2,116,719	2,116,719
Long Island.....	5 mos.	6,069,306	13,377,273	20,375,722	3,059,357	4,250,111	39,014	11,678,994	19,802,879	96.2	2,116,719	2,116,719	2,116,719

Table continued on next left-hand page.

July 16, 1951

RAILWAY AGE



Look closely at the construction of a Diesel Locomotive and you'll find it is literally held together by Cap Screws . . . *hundreds of 'em*. And on the heads of many you'll find stamped "L 1035" . . . the trade mark of Lamson's famous "double heat-treated" Cap Screws.

Yes, Lamson "1035" Cap Screws have been "working on the railroad" for many years—have proven that they're just the ticket for those extra tough holding jobs. The wide selection of types include, "1035" (black), "1020" (black), bright and alloy cap screws, drilled, undrilled or "specials".

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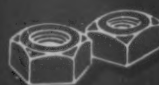
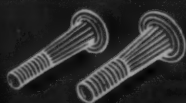
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FASTENERS THAT KEEP PACE WITH RAILROAD PROGRESS



MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1951

TYPE D PNEUMATIC AUTOMATIC SLACK ADJUSTER FOR FREIGHT CARS

~~Saves Time~~ ~~Prevents False "Take-Up"~~ ~~Conserves Cylinder Force~~ ~~Eliminates Manual Adjustment~~



Proven in years of Passenger Service. Ask for Descriptive Leaflet 2468.

If predetermined travel of brake cylinder piston is exceeded, air is admitted to slack adjuster, compressing piston against spring. Upon brake release, spring returns piston, and pawl engages and turns ratchet nut, shortening tie-rod connection.

Westinghouse Air Brake Co.

WILMERDING, PA.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1951

Name of road	Av. mileage operated during period	Operating revenues				Operating expenses				Operating ratio	Net from railway operation	Net railway operating income	
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Equipment	Traffic	Transportation	Total			Railway tax accruals	1951
Pennsylvania-Reading Seashore Lines.....	365	694,736	158,109	852,845	200,282	99,309	13,388	597,069	943,596	105.1	46,050	96,911	278,916
May.....	5 mos.	2,942,830	605,638	3,548,468	1,132,043	468,063	50,612	2,790,473	4,624,333	123.8	-889,257	476,649	-2,008,072
Pittsburgh & Shawmut.....	366	205,783	206,490	412,273	30,213	46,085	3,589	49,455	138,126	66.9	68,364	5,778	66,987
May.....	5 mos.	1,010,386	127,640	1,138,026	174,524	274,827	17,284	270,487	732,882	72.5	277,504	52,785	222,234
Pittsburgh & West Virginia.....	97	779,464	.....	779,464	158,348	197,752	48,790	211,738	644,128	81.9	142,492	90,819	108,777
May.....	5 mos.	3,556,005	3,604,622	7,160,627	658,680	849,749	245,289	1,000,011	2,887,402	80.1	717,220	460,543	570,782
Reading.....	1,313	9,816,544	586,061	10,402,605	1,763,469	2,597,864	146,817	4,351,789	9,190,703	83.0	1,478,873	1,197,273	810,297
May.....	5 mos.	47,034,687	2,883,554	49,918,241	7,340,499	11,601,214	694,056	21,621,361	42,920,341	80.6	10,324,381	5,755,461	4,752,316
Richmond, Fredericksburg & Potomac.....	1,118	1,620,024	499,066	2,119,090	311,456	339,318	20,101	750,288	1,515,639	63.3	879,026	473,809	262,827
May.....	5 mos.	7,427,215	2,924,067	10,351,282	1,344,468	1,399,347	101,446	3,736,906	7,278,533	62.6	4,343,064	2,231,550	1,556,741
Rutland.....	407	451,151	.....	451,151	88,562	87,777	16,558	266,522	482,592	89.1	65,372	32,338	8,806
May.....	5 mos.	1,938,521	118,258	2,056,779	433,849	428,760	76,206	1,296,489	2,344,950	97.1	71,215	165,917	-198,246
Sacramento Northern.....	271	307,765	138	307,903	70,927	18,589	2,159	98,856	198,298	63.0	116,523	16,386	69,693
May.....	5 mos.	1,346,906	271	1,347,177	294,578	91,190	10,745	449,420	886,529	64.4	490,735	78,903	305,809
St. Louis-San Francisco.....	4,601	8,703,367	636,060	9,339,427	1,698,938	1,651,823	291,496	3,953,332	8,070,927	80.0	2,023,906	1,174,393	914,283
May.....	5 mos.	43,352,308	3,202,044	46,554,352	8,356,582	8,498,887	1,362,340	19,029,829	39,518,844	78.9	10,589,316	6,155,098	4,845,470
St. Louis, San Francisco & Texas.....	159	354,175	10,263	364,438	46,737	43,609	19,565	189,531	317,190	81.1	74,048	14,979	16,219
May.....	5 mos.	1,797,048	53,766	1,850,814	236,009	193,482	92,968	766,956	1,340,634	67.3	637,603	245,355	147,889
St. Louis Southwestern Lines.....	1,569	5,799,106	58,706	5,857,812	957,240	751,939	155,633	2,011,516	4,069,575	67.1	1,998,717	1,056,800	712,421
May.....	5 mos.	27,713,216	301,706	28,014,922	4,391,381	3,455,724	761,529	8,211,744	17,404,113	60.0	11,612,560	6,391,368	3,974,073
Seaboard Air Line.....	4,146	5,926,516	1,976,654	7,903,170	1,155,688	1,087,308	1,733,558	2,255,958	4,977,062	73.1	17,139,256	1,730,180	4,535,560
May.....	5 mos.	29,521,570	9,889,234	39,410,804	5,556,308	5,372,559	8,408,395	10,967,782	24,538,525	73.3	6,051,653	3,002,558	2,350,350
Southern.....	6,344	92,729,754	7,899,785	100,629,539	14,892,547	20,207,729	1,977,657	38,182,151	79,523,612	73.8	26,279,835	13,463,769	11,401,868
May.....	5 mos.	460,355	3,591,116	4,051,471	818,409	324,207	39,280	1,121,778	2,420,561	67.4	1,170,555	340,757	273,342
Alabama Great Southern.....	316	1,517,924	85,314	1,603,238	255,210	401,501	30,273	620,248	1,373,347	79.9	344,590	246,038	141,553
May.....	5 mos.	7,034,320	424,379	7,458,700	1,153,223	1,944,440	159,643	2,883,411	6,441,706	80.1	1,598,291	1,151,996	667,679
Cinn., New Orleans & Texas Pacific.....	336	2,481,938	246,720	2,728,658	454,934	745,612	72,850	1,022,305	2,421,324	62.2	1,473,558	948,771	602,585
May.....	5 mos.	16,414,451	1,143,434	17,557,885	2,246,840	3,848,290	330,793	4,959,712	12,018,608	65.2	6,410,554	4,081,976	2,700,897
Georgia Southern & Florida.....	397	606,276	52,229	658,505	164,903	70,517	8,173	219,018	478,940	67.0	235,951	63,751	57,240
May.....	5 mos.	2,850,526	460,355	3,310,881	818,409	324,207	39,280	1,121,778	2,420,561	67.4	1,170,555	340,757	273,342
New Orleans & Northeastern.....	203	1,060,650	43,087	1,103,737	162,228	133,776	18,531	274,456	327,232	54.9	522,572	324,942	166,700
May.....	5 mos.	4,977,909	230,449	5,208,358	823,832	607,275	97,122	1,279,439	3,024,746	55.4	1,478,367	1,478,367	785,125
Southern Pacific.....	8,127	38,643,857	3,339,388	41,983,245	4,926,266	9,116,767	787,054	17,177,071	33,907,998	76.4	10,494,883	5,789,867	3,176,084
May.....	5 mos.	175,643,371	16,852,322	192,495,693	23,347,437	41,862,872	7,797,095	78,149,916	156,599,516	76.7	47,462,235	26,263,444	15,849,771
Texas & New Orleans.....	4,292	10,210,211	800,205	11,010,416	1,878,531	2,013,081	257,867	4,598,417	9,299,328	79.2	1,183,196	80,286	808,660
May.....	5 mos.	50,186,761	3,942,539	54,129,300	9,279,431	9,059,895	1,227,776	21,852,603	44,095,579	76.3	13,688,863	6,435,024	4,486,103
Spokane International.....	152	254,403	745	255,148	53,573	22,309	4,665	62,565	152,118	57.1	114,508	42,585	53,841
May.....	5 mos.	1,020,761	2,833	1,023,594	287,833	104,221	23,412	278,013	739,184	72.4	281,577	86,918	129,065
Spokane, Portland & Seattle.....	931	2,310,485	72,539	2,383,024	425,153	772,796	25,160	772,155	1,596,549	63.5	919,289	537,006	263,677
May.....	5 mos.	10,433,703	368,386	10,802,089	1,864,060	1,443,894	122,516	3,621,478	7,473,102	65.5	3,940,001	1,249,679	2,274,786
Tennessee Central.....	286	387,475	14,325	401,800	92,337	74,289	11,911	144,688	343,014	81.0	80,286	24,894	30,682
May.....	5 mos.	1,853,184	84,765	1,937,949	435,473	348,210	54,894	720,082	1,655,698	79.6	425,052	126,520	143,187
Texas & Northern.....	8	103,394	.....	103,394	3,058	8,400	937	31,401	47,645	41.6	66,978	39,116	14,618
May.....	5 mos.	484,851	.....	484,851	39,747	48,036	4,858	153,400	266,959	46.7	281,562	115,317	101,117
Texas & Pacific.....	1,846	5,507,929	423,929	5,931,858	893,240	1,013,390	178,034	2,159,810	4,576,942	71.4	1,833,753	803,543	754,562
May.....	5 mos.	26,952,038	2,017,512	28,969,550	4,288,449	4,740,258	835,075	10,413,930	21,856,703	69.6	9,534,239	4,290,808	3,513,806
Texas Mexican.....	162	257,111	.....	257,111	292,537	33,038	7,562	77,057	208,947	71.4	83,590	32,380	27,400
May.....	5 mos.	1,259,172	.....	1,259,172	335,217	156,506	34,686	326,957	943,957	66.7	470,472	184,438	178,708
Toledo, Peoria & Western.....	239	540,795	25	540,820	112,842	47,800	48,845	139,192	302,206	69.7	165,994	86,543	38,983
May.....	5 mos.	2,917,284	27	2,917,311	434,855	196,808	221,786	673,312	1,691,111	57.2	1,262,397	654,750	359,833
Union Pacific.....	9,718	36,399,338	3,067,226	39,466,564	7,008,825	8,177,080	937,722	14,655,346	32,874,642	77.4	9,583,008	6,409,022	1,698,827
May.....	5 mos.	171,719,926	13,463,683	185,183,609	26,869,371	39,568,848	4,506,712	71,161,183	152,138,479	76.6	46,436,920	30,431,546	9,729,518
Utah.....	110	60,657	.....	60,657	15,203	40,477	727	35,398	98,951	162.9	-38,189	9,368	-20,846
May.....	5 mos.	402,456	.....	402,456	84,437	243,337	3,943	225,332	593,326	147.0	-195,686	54,600	-136,484
Virginian.....	643	3,944,455	2,401	3,946,856	450,328	845,971	44,089	868,685	2,292,943	55.8	1,810,784	1,208,000	750,832
May.....	5 mos.	17,847,945	11,261	17,859,206	2,633,142	3,984,151	290,829	4,925,458	10,608,655	57.3	7,250,751	5,164,500	3,651,308
Wabash.....	2,393	8,257,627	424,969	8,682,596	1,352,123	1,270,173	270,139	3,170,378	7,008,523	73.9	2,354,415	1,289,037	650,785
May.....	5 mos.	41,651,611	2,060,891	43,712,502	5,882,115	6,952,324	1,355,123	19,076,706	34,733,639	71.5	12,000,037	5,813,223	4,366,600
Ann Arbor.....	294	767,111	.....	767,111	95,714	110,938	26,350	30,199	204,527	73.6	343,600	63,400	133,983
May.....	5 mos.	3,799,017	.....	3,799,017	408,259	540,860	123,718	1,589,907	2,751,123	71.8	1,081,268	542,550	530,453
Western Maryland.....	837	3,557,777	9,211	3,566,988	564,765	750,293	80,527	1,180,457	2,736,856	73.0	1,013,278	631,000	630,009
May.....	5 mos.	19,214,639	37,968	19,252,607	2,733,977	3,938,327	391,268	6,329,820	14,168,880	70.1	6,039,567	3,583,000	2,940,392
Western Pacific.....	1,193	4,213,965	306,070	4,520,035	729,095	671,773	173,558	3,277,998	3,356,114	73.6	1,269,643	1,166,443	792,523
May.....	5 mos.	20,864,552	1,180,160	21,044,712	3,010,061	3,254,679	848,887	6,299,874	14,749,974	65.6	7,734,963	4,168,253	3,194,815
Wisconsin Central.....	1,051	2,581,868	35,543	2,617,411	464,819	448,621	71,413	1,057,203	2,139,527	77.1	633,938	164,548	266,647
May.....	5 mos.	11,567,185	169,132	11,736,317	1,698,647	2,400,220	322,221	5,374,323	10,271,689	83.2	2,071,895	795,688	794,938

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haul for more pay hours

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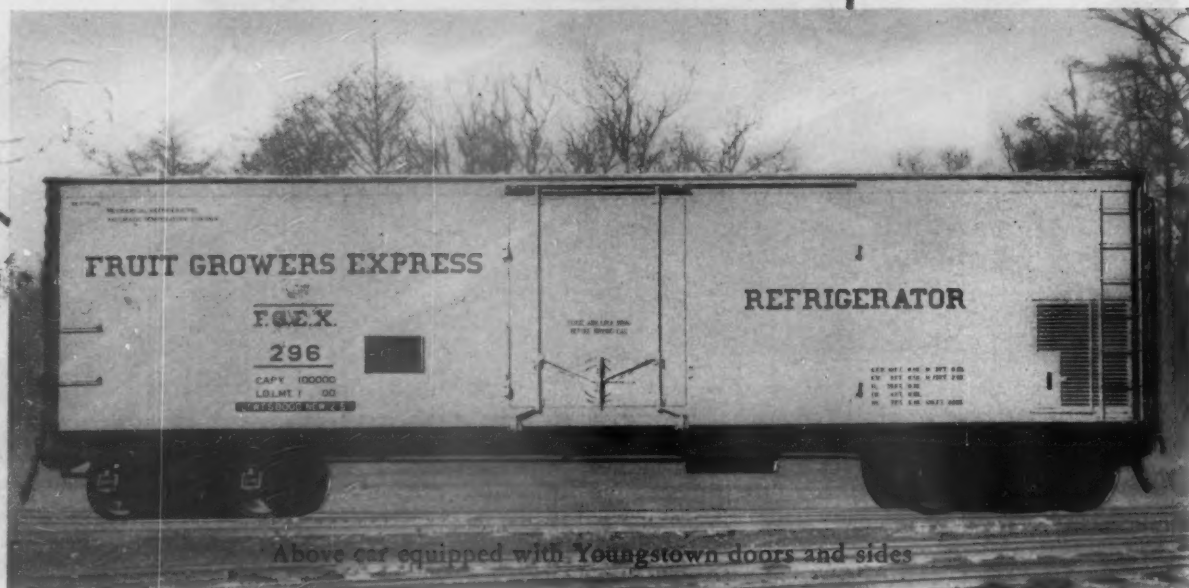
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Camel Sales Company
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THE RAILWAYS' SHRUNKEN MARGIN OF PROFITS

The most important and dynamic part of the earnings of every business or industry is its net operating income. This "margin of profit" has provided either as earnings or as a basis for credit all the capital that ever has been invested; and on its future adequacy will depend the adequacy of all future investment.

The foregoing are truisms known by every student of economics. But most persons are not students of economics, and in a period of crisis such as the present when a vast expansion of production is needed the truisms of economics cannot be emphasized too much or too often.

Differences in Industrial Needs

The "margin of profit" needed depends on the nature of a business—on how much investment in plant it requires to accomplish any given amount of production or to render any given amount of service. There is a wide difference in this respect between most of the manufacturing and most of the service industries. A meat packing company needs so little investment in plant to do a large business that it can make a large percentage on its investment from a net operating income having a ratio of only a few cents to each dollar of its gross earnings. But a company rendering only service, such as an electric light and power company or a railroad, requires an investment so much larger in proportion to its gross earnings that it must have a much higher ratio of net operating income to gross earnings than any kind of manufacturing company. But whatever the nature of the business a serious decline in the ratio of its net to gross soon dries up its sources of capital. A truck

operator needs very little profit margin because the great bulk of the plant he uses—the highways—is supplied by government and does not have to be paid for out of the trucker's net earnings.

A very serious decline in the ratio of net to gross has occurred in the railroad industry. Having occurred when continued large-scale improvement and expansion of the railroads are absolutely essential to a large increase in production for both military and civilian purposes, it presents one of the most important economic problems confronting the American people. The following statistics illustrate strikingly what has occurred: In 1929 railway net operating income was \$1,275 million. In the twelve months ending with May, 1951, it was only \$1,113 million. Meantime annual gross earnings increased from \$6,360 million to \$10,308 million. Hence in 1929, net operating income was 20 per cent, or *one-fifth*, of gross, whereas in the last twelve months for which statistics are available net operating income was 10 per cent, or only *one-tenth* of gross.

This decline in the industry's margin of profit would be serious enough if there had been no decline in the purchasing power of its profits; because a profit margin of only 10 per cent can be wiped out by only one-half as great a decline of gross earnings as a margin of 20 per cent. But, owing to inflation, there has occurred a decline of at least one-half in the purchasing power of the dollar. The railways are seeking an advance of 15 per cent in freight rates partially to restore their margin of profits. But some labor unions are seeking further advances in wages, government is still increasing taxes, and some classes of shippers, including representatives of government, are opposing advances in rates. The

principal argument used both *for* advances in wages and *against* advances in rates is *inflation*—the contentions being, on the one hand, that higher wages are necessary because of past inflation, and, on the other hand, that advances in rates should not be made because they would increase inflation in future.

Dangerous to National Economy

There can be no doubt of the danger to the economy presented by past and prospective inflation. But the national economy and the program of preparedness could be damaged quite as much by lack of railroad capacity as by more inflation. A huge increase in production is as necessary to prevent more inflation as to provide for military and civilian needs. To accomplish this increase of production it is essential that the nation's productive and transportation capacities shall be kept balanced; for production cannot possibly be increased any more than the transportation of raw materials and finished products to and from the productive industries; and experience during the last war conclusively demonstrated that only railways are capable of providing the mass transportation required. The railways are making the greatest efforts and expenditures in history to increase their capacity; but these expenditures can be maintained and increased only with capital derived directly and indirectly from a much larger net operating income than they are now earning. The only means by which they can get the required increase in net operating income is by an advance in rates. Their application for an advance of only 15 per cent in freight rates is extremely moderate in comparison with the advances in wages and prices that the government already has approved and which have so greatly increased the costs of everything the railways must buy, and so greatly reduced the purchasing power of their dollar.

If they had had during the last year the 20 per cent margin of profit that they had in 1929, their net operating income would have been more than \$2 billion. The \$1,113 million actually earned had less than half of the purchasing power of the \$1,275 million earned in 1929. This shrinkage in the margin of profit has been due to government controls which apparently have disregarded completely the effects they may have, not only on the railways, but on the national economy, at a time when the economy imperatively needs a great expansion of railway capacity. The railway managements are doing their utmost to prepare the railways to do their part now and in future in meeting the national emergency. Their efforts are being sabotaged by controls applied by the same government which is daily and hourly urging every citizen and industry to prepare for the worst that can happen, and is seeking additional controls that could be used similarly to sabotage other industries. Small wonder, in view of railway experience, that other industries, and public men who desire to maintain free enterprise in this country, are opposing the expansion of controls over all industry being sought by a socialistic administration.

GET THEM WHILE THEY ARE YOUNG

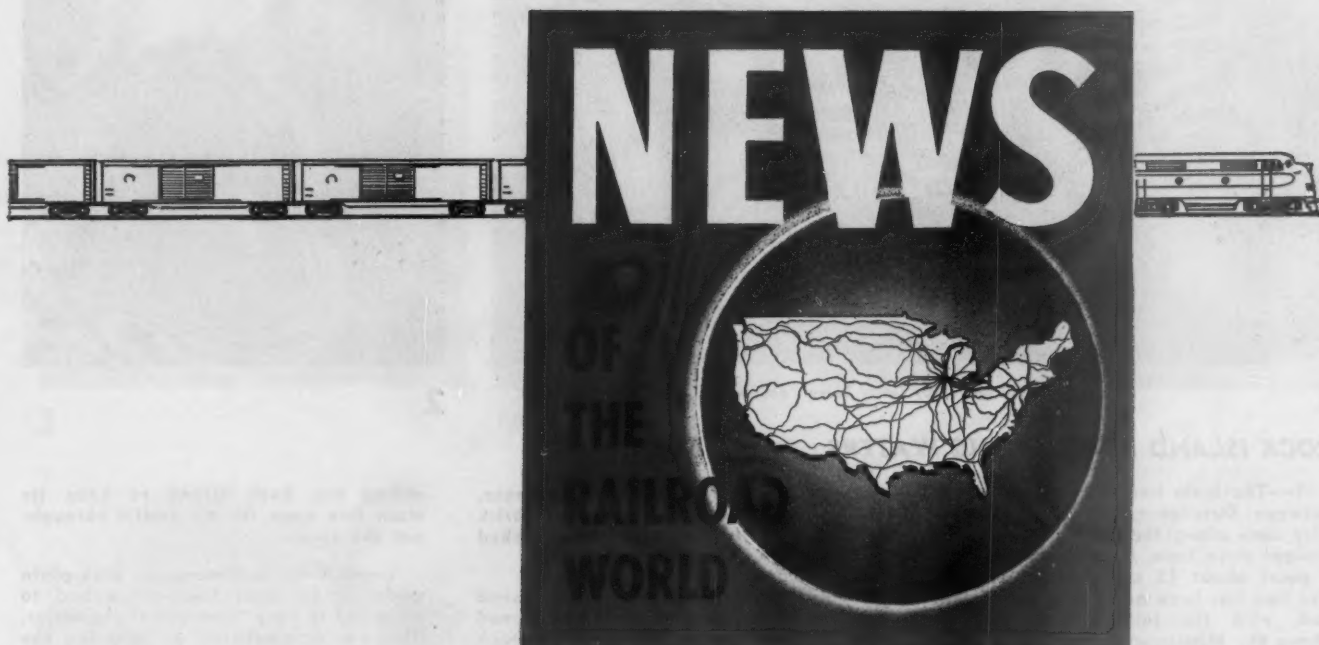
Young America of 1951 may have one of its collective eyes fixed on the stratosphere; and one of its collective ears attuned to the swoosh of jet-powered planes. But apparently it is quite willing—given half a chance—to succumb once more to the century-old lure of the “high iron”; to the glide of streamlined “varnish”; to the surging power of today's diesels.

Lots of youngsters had a chance to display that willingness last April—which was “Railroad Month” for the country's 830,000 Cub Scouts. How they reacted is plainly evident in the faces of the youngsters pictured on pages 52 and 53 of this issue, and in the statement, also recorded there, that the Association of American Railroads has received “several thousand letters of enthusiastic thanks” for the “great volumes” of material it was called upon to supply to Cub leaders.

The Cubs are only from eight to ten years old. They don't make many trips or control much traffic—yet. But there are nearly a million of them; they are the travelers, the sales directors, the traffic managers of tomorrow. And, because a boy is eligible for membership only within strictly limited age brackets, there is necessarily a complete turnover in membership every three years. What interests the Cubs will also interest their dads, who will not overlook the courtesies the railroads show to their offspring.

Why, therefore, not make “Railroad Month” a regular Cub event? Not, perhaps, each year, but at least once every three years, to give every youngster who passes through Cub ranks one chance to satisfy the interest in railroads which, we believe is still deeply ingrained in most small boys. It would almost certainly pay off in future goodwill—and might even produce a few welcome additional dollars of present revenue. The day has passed—with the ascendancy of the private automobile for passenger transportation—when contact with the attractions of the railroads comes automatically to all Americans, as it did a generation ago. Such acquaintance now has to be deliberately cultivated or it may be omitted, to the industry's long-run detriment.

“The railway signal industry is based on the maintenance of exceptionally high standards of precision manufacture of devices and systems developed, by extensive engineering and research, to provide for safe movement of trains at increasingly higher speeds over minimum trackage and with minimum force for operation of the signal systems. From the development of the automatic block system, which provided maximum protection at minimum operating cost, to the development of Centralized Traffic Control, American signal systems have been designed as facilities for increasing track capacity, safely and economically. They have provided facilities for more efficient use of tracks, motive power and cars and have thereby held down the overhead as well as the direct operating costs of conducting rail transportation.”—Charles M. Wheeler, vice-president, Union Switch & Signal Co., at a meeting of the New York Society of Security Analysts.



Large Increases In Expenses Forced Railroads To File 15 Per Cent Rate Increase Petition

Roads tell Interstate Commerce Commission wages and prices are up \$1 billion from 1949; also cite low rate of return and need for money to continue improvement programs

Increased operating expenses amounting to more than a billion dollars a year made it "absolutely necessary" for the nation's railroads to seek a freight-rate increase, E. H. Burgess, vice-president and general counsel of the Baltimore & Ohio, told the Interstate Commerce Commission at the opening of oral argument in the Ex Parte 175 case last week.

Since July 1, 1949, wages and prices together have increased expenses \$1.006 billion, Mr. Burgess declared. He added that the larger part of this increase, \$941 million, will be incurred for the first time in 1951, and he pointed out that this \$941 million alone is considerably more than the total net income earned by the carriers in 1950.

"The issue here is whether the railroads of this country are to be permitted to earn sufficient revenue to provide the kind of volume transportation the nation needs," Mr. Burgess said. He went on to say that railroad purchasing power today is actually less than in the depression years, and declared that increased traffic and efficiency is the only explanation of why the railroads are not "completely insolvent."

This presentation by Mr. Burgess

marked the beginning of final argument on the pending railroad petition for a permanent 15 per cent increase in freight rates. (*Railway Age*, April 2, page 63.) The entire membership of the commission was present, along with a cooperating committee of state commissioners. These were Joshua S. James, North Carolina; Leonard E. Lindquist, Minnesota, and Kenneth Potter, California.

Mr. Burgess told the commission that without the revenues sought by the petition for increased freight rates, the railroads cannot produce the kind of transportation they are being called upon to produce for both defense and civilian needs. The roads will not be able to meet capital expenditures to which they are already committed, nor will they be able to improve or maintain the present railroad plant with revenues being whittled down by cost increases, he said.

The rate of return of 3.95 per cent which the railroads earned on net investment in 1950 will drop to 2.97 per cent this year, Mr. Burgess asserted. The proposed increase, if in effect the full year, would increase the rate of return to "only 4.8 per cent," he said. He then asked the commission to recall a former rate case, Ex Parte 166,

when it approved rates estimated to produce a rate of return of 5.9 per cent, based on what the commission called a "normal constructive year."

Commenting on the role of various government agencies in the present rate case, Mr. Burgess said it was "strange" that some agencies, such as the Defense Production Administration and the Defense Transport Administration, should be calling on the carriers to improve their plant for any emergency, while other agencies are before the commission opposing the rate increase that would give the roads the money to do this improving.

Other Railroad Arguments

Other railroad attorneys joined Mr. Burgess in presenting the railroad case. William L. Grubbs, general counsel of the Louisville & Nashville, Edward A. Kaier, general attorney of the Pennsylvania, and H. C. Barron, counsel for the executive committee, Western Traffic Association, spoke for the southern, eastern and western roads, respectively. They were followed, in turn, by a parade of government agencies, state commissions, and private shippers, all urging the commission to deny the railroad petition. The latter presentations were continuing as this issue went to press.

Mr. Grubbs told the commission that many roads in the South already have indicated they cannot go ahead with expansion and improvement programs, even for the remainder of 1951. He said under present conditions no major road in Southern territory will earn as much as 4 per cent this year.



1

All photos by Gerry Becker, engineering department, C.R.I.&P.

ROCK ISLAND BEATS RISING WATERS

1—The main line of the Rock Island between Davenport, Iowa, and Kansas City runs along the banks of the Mississippi river from Muscatine, Iowa, to a point about 15 miles north. The entire line has been built on a solid road-bed, with the rails a safe distance above the Mississippi's previous all-time high water mark for spring floods. But this spring was different, and rang up new flood records. As the flood neared its peak, U. S. Army Engineers reported that the Mississippi would reach a flood peak of 21.5 feet at Muscatine—two and one half feet over the previous all-time high. This meant that the main line starting at the Muscatine depot shown above, and extending about 9,000 feet north, would be in danger of submersion.

2—The first step was to place sandbags along the foot of the ballast on the river side to prevent destructive

wave wash. This was necessary because, during most of the high water, brisk winds from the opposite shore kicked up two-foot to three-foot waves.

3—Emergency work trains rushed ballast to the spot, where it was spread in the conventional manner. The track was then raised, as shown here, using Nordberg track jacks, in three lifts averaging seven inches each.

4—The raised track was then tamped, using Jackson and Pullman power tampers. Fortunately, U. S. Army Engineer predictions of prospective flood heights—usually accurate to within one or two inches—were received several days in advance, allowing three days to gather the men and materials and raise the track before the flood crest was scheduled to pass Muscatine. The use of power machines helped complete this job in record time, thereby en-



2

abling the Rock Island to keep its main line open for all traffic throughout the flood.

5—Rails on a three-span, deck-plate girder bridge over Mad creek had to be raised to keep them out of the water. This was accomplished by stripping the rails, then laying stringers flat-ways on the ties, and new ties on the stringers. The ends of the ties showing the former grade are barely visible in this view of an approaching work train.

6—The two-foot to three-foot waves were a serious problem on other parts of the line not threatened with inundation. Destructive wave wash of embankments was stopped by a variety of expedients—including log rafts, as shown, stone riprap, and snow and woven wire fencing laid over straw and weighted at the bottom with sandbags and cabled to the shore at the top.

The 2 per cent interim increase authorized by the I.C.C. last March "fell with a shock" upon the Southern carriers, Mr. Grubbs continued. He called it a "serious mistake" to provide an inadequate increase in freight rates at a time when the railroads are being asked to spend "tremendous sums" for plant expansion and improvement.

As to the Eastern roads, Mr. Kaier said they would have added operating costs of \$420 million in 1951, in spite of low earnings. He said roads in the East have been forced to cut maintenance and car repair programs, and argued that there is not the "barest warrant" for not granting the railroads what they have asked.

Mr. Barron declared that Western roads filed for the 15 per cent rate increase out of "positive necessity," and said these lines were "scratching bottom" in the first five months of 1951. He denied charges that the Western carriers were not in whole-hearted support of the petition when it was filed, and went on to say that roads in the West would have been compelled to file

on their own behalf if the railroads in other territories had not seen fit to ask for an increase in rates.

L. E. Torinus, Jr., assistant general counsel of the Great Northern, rounded out the railroad presentations with a special plea for roads that transport iron ore in the Lake Superior region. Mr. Torinus said these roads are "in immediate need" of increased revenue from iron ore traffic, and pointed out that as a group they earned only a 3.12 per cent return on net investment in 1950. The commission did not authorize any increase in iron ore rates in the interim-increase decision last March. (*Railway Age*, March 19, page 69.)

Government Opposition

Opposition to the railroad position began with presentations from the Department of Commerce, Tennessee Valley Authority, General Services Administration, Department of Agriculture, and Economic Stabilization Agency. They contended generally that the railroads have underestimated

their traffic and revenues for 1951, that increased efficiency through dieselization will offset higher operating costs and that higher rates would dry up traffic or drive it to other carriers.

C. D. Williams, solicitor for the Commerce Department, told the commission that the railroads "have not established a right" to a 15 per cent rate increase, but went on to say that "due consideration" should be given to the heavy equipment-buying programs which have been instituted in part at the "express request of the government."

The spokesman for T.V.A. and G.S.A., Charles J. McCarthy, took the position that the unit cost per thousand revenue ton-miles did not increase from April 1949 through April 1951. He said increases in efficiency and traffic volume have "substantially offset" increases in labor and material costs, thus holding unit costs at the same level. Mr. McCarthy argued that no "great urgency" exists and asked the commission to let the interim increase continue two, three or four more



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months" before handing down a final decision. He also called attention to the brief filed by G.S.A. which, among other things, recommended that any increases authorized be on a six months trial basis, and that such increases automatically cease at the end of that period "unless and until" the railroads establish the "continuing need" for such or any increases.

Lester R. Conley, who represented the E.S.A., said that his agency did not oppose "necessary" rate increases for the railroads, but urged that the commission consider "the inflationary risk" to be run in allowing an increase. Walter Matson of the Department of Agriculture told the commission that the railroads have underestimated their traffic volume for 1951, and said many of the expense figures offered by the roads are "obviously erroneous." Mr. Matson also said increased wage costs could be absorbed by the carriers through use of more efficient diesel-electric locomotives.

The American Trucking Association and the National Industrial

Traffic League were among others participating in the case. The A.T.A.'s counsel, Edgar S. Idol, urged the commission to "require all railroads accepting any increase that you authorize in this proceeding to apply that increase in full across the board." Mr. Idol said the A.T.A. took no position as to granting or denying the railroad petition, but feared the railroads would use the added revenues to finance selective rate cuts that would undermine truck rates.

N.I.T. League's Position

John S. Burchmore, speaking for the N.I.T. League, said the league's interest in the case was of a "general" nature, and that it would be impossible for him to discuss the "main" questions involved in the proceeding. He went on to say, however, that there is one matter which the commission should consider—and that is the fear in the minds of many shippers that an "enormous amount" of government traffic is moving at rates lower than regular shippers pay. He suggested

that the commission study the matter, and perhaps "put in a plug" to assure that any revenues the railroads get out of this case will not be drained away later in moving government traffic at less than cost.

A. G. T. Moore of the Southern Traffic League and Southern Pine Association, also discussed so-called Section 22 rates, and told the commission it should make certain that any increases granted the railroads not be dissipated through rebates under Section 22 rates. He said the railroads should be required to file regular reports with the commission, showing revenue losses under any rates that carriers negotiate with the government under Section 22.

Firemen's Union Announces Plan to Take Strike Vote

The Brotherhood of Locomotive Firemen & Enginemen on July 11 announced plans for the taking of a strike vote among its members after July 15. The brotherhood is one of the three

JOHN DRANEY DIES AT 90



John F. Draney, at the time of his retirement from active service on the Lackawanna—December 31, 1931

John F. Draney—perhaps the most widely known engineman who ever handled a throttle on an American railroad—died at his home in Jersey City, N. J., on July 7, at the age of 90, 19½ years after his 1931 retirement from 58 years of service with the Delaware, Lackawanna & Western.

The son and grandson of Lackawanna employees, Mr. Draney went to work for

that company as a water boy with a track maintenance crew in 1873, and was a road engineman from 1900 until his retirement—31 years. For the last 16 years of that period he handled the "Lackawanna Limited"—predecessor of the present "Phoebe Snow"—between Scranton, Pa., and the Lackawanna's eastern passenger terminal at Hoboken, N. J.

His best known single run was made just after the assassination of United States President William McKinley at Buffalo, N. Y. On personal instructions from Lackawanna President William H. Truesdale, Mr. Draney handled a four-car special train carrying New York doctors and nurses to McKinley's bedside. Leaving Hoboken at 8:30 p.m. September 11, 1901, and with stops at all division points, the train reached Buffalo at 3:15 the next morning, for elapsed time of six hours and 45 minutes, which is said to be the fastest railroad time ever recorded between the two cities. Top speed of 115 m.p.h. was reached between Alden, N. Y., and Darien.

Mr. Draney was a member of the Brotherhood of Locomotive Engineers, a former president of the Lackawanna Veterans' Association, and a panel member of the radio and television program, *Life Begins at Eighty*, on which he had appeared, as usual, only the week before his death.

operating unions involved in unsettled wage and rules cases, the other two being the Brotherhood of Locomotive Engineers and the Order of Railway Conductors.

The general chairmen of these three unions recently rejected railroad management's proposal for settlement on the basis of an agreement like that reached with the Brotherhood of Railroad Trainmen (*Railway Age*, July 2, page 33). Since the rejections there have been additional mediation proceedings in Washington under the auspices of the National Mediation Board.

In announcing its plans for the strike vote, the B. of L. F. & E. revealed that the action was taken pursuant to a resolution adopted by the brotherhood's general chairmen after they had rejected management's settlement proposal. The resolution called for the vote unless an "acceptable basis" for settlement were obtained by July 15.

It was stated that the brotherhood was not withdrawing from the mediation proceedings; and it was suggested that these proceedings could continue even after a strike vote had been taken. It was also stated that the general chairmen adopted the resolution because they desired to have an expression from the rank and file.

With the railroads under Army control since President Truman seized them last August in the face of a B.R.T.-O.R.C. strike threat, the courts

might be expected to enjoin a walkout as they have in past similar situations. Nevertheless, a strike-threat maneuver might result in appointment of an emergency board to consider the Firemen's case. Presumably, the B. of L. E. could execute a like maneuver, but further emergency board procedures would seem to be unavailable to the O. R. C. The latter's case has already been passed upon by an emergency board.

Shortages of Alloy Steel Halting Diesel Production

The National Production Authority has been advised by its Locomotive Builders Advisory Committee that "shortages of alloy steel are causing shutdowns of some plants constructing diesel-electric locomotives." This was announced in an N. P. A. statement, reporting on the committee's July 6 meeting in Washington, D. C.

The announcement also said that "N. P. A. and the committee agreed that the railroad industry cannot be expected to move defense freight on schedule unless new diesel locomotives are provided."

R. L. Glenn, acting director of N. P. A.'s Railroad Equipment Division, presided at the committee meeting, which was held "to consider methods of conserving critical materials used in locomotive production."

On that phase of the meeting, N. P. A.'s press release made this report:

"Large quantities of copper are used but little of it can be substituted for or conserved, members said. Several builders said they are attempting to substitute boron-treated steel for some scarcer alloys but are finding it impossible to get shipments of boron steels.

N. P. A. said that boron and vanadium steels are in good supply, and officials promised to investigate conflicting reports on the availability of boron steel."

It was also reported that "N. P. A. officials said they would consider steps to relieve the pressing shortage of steel for locomotive builders."

Eastern Roads Ask Higher Commuter Fares

Seven railroads operating commutation service in the New York-northern New Jersey area filed with the Interstate Commerce Commission and the state public utility commissions on July 10 new tariffs, to become effective August 10, providing for increases in commutation fares "to offset in part large increases in operating expenses and to reduce heavy deficits sustained in rendering commutation service."

The new fare schedule, with some exceptions, would generally advance the cost of weekly tickets to and from New York City by 75 cents; of Monday-to-Friday monthly tickets by \$2.70, and of unrestricted monthly tickets by \$3.

On intrastate tickets between points in New Jersey where current fares are now lower than interstate fares, increases would be somewhat greater to equalize intrastate and interstate fares for like distances.

Roads filing new tariffs include the Delaware, Lackawanna & Western; the Erie; the Lehigh Valley; the New Jersey & New York, and the Pennsylvania. The Central of New Jersey is at present filing on interstate traffic only.

The West Shore (New York Central) is asking for increases in monthly tickets only, on the same basis as the other roads, "plus a variable differential to bring its rates to the level of those on other New Jersey railroads for corresponding distances"; and plus, also, a flat surcharge of \$2 on both types of monthly tickets for passengers using W.S. ferries from Weehawken, N. J., to Cortlandt street, in downtown New York. Last year's loss on ferry operation, the N.Y.C. said, was over \$1,250,000—more than "gross receipts from transportation of all passengers carried on the West Shore."

Concerning the need for higher fares, the railroads said:

"The cost of providing (commutation) service . . . has steadily increased to a point where if the railroads are to continue to operate the service for the convenience of their patrons some reduction must be made in losses sustained. Freight shippers

and others are insistent that passenger service, which includes commuter service, stand on its own feet so as to reduce losses that drain off freight revenues.

"Although these new commuter fares will fall far short of making ends meet, they will help to reduce losses.

"It may be asked why the railroads propose a flat increase applying to all commuters regardless of the distance they ride. The reason is that commutation service with its twice-a-day peak load is unlike other passenger service. Commutation trains obviously must carry equipment and crews to accommodate morning and evening rush periods. The investment in equipment, terminal expenses and many other costs are the same for long-haul and short-haul passengers. While we will continue to charge a higher fare for the long-haul commuter, we believe it is proper to recognize the fact that certain fixed costs are the same regardless of distance travelled. For these reasons the increase in commuter fares is being made on a flat basis so that both short-haul and long-haul riders will, in fairness, pay the same amount of increase."

Tariffs covering similar increases in commuter fares have been, or are expected to be, filed by railroads in the Philadelphia, Pittsburgh and Cleveland commutation areas, and by other roads in the New York area.

Philadelphia area railroads which would seek higher rates are the Baltimore & Ohio, the Pennsylvania, the Reading and the Pennsylvania-Reading Seashore Lines. In the Pittsburgh area, the B. & O., the P.R.R. and the Pittsburgh & Lake Erie have filed tariffs on the same basis as the New Jersey roads.

Fire Damages P.R.R. Bridge

Fire of undetermined origin damaged track and draw controls on the Pennsylvania's 296-foot drawbridge over the Hackensack river between Secaucus, N. J., and Kearny on the afternoon of July 11, halting for about 5½ hours all passenger traffic on the railroad's main line to and from Pennsylvania Station, New York. Passengers between New York and Newark were detoured during the interruption via Hudson & Manhattan tubes; P. R. R. main-line service was virtually back to normal by the morning of July 12.

The bridge is largely of steel construction, but the fire burned out several hundred feet of ties and damaged the draw controls to an extent which may make operation of the draw span impossible for about two weeks.

D.P.A. Sets "Program Levels" for Third Quarter

"Program levels" established by the Defense Production Administration for this year's third quarter contemplate allotments for "railroad equipment" of 882,417 tons of steel, 37,385,000 lb. of copper and 6,300,000 lb. of aluminum. This was announced by D. P. A. in a July 6 statement which explained that the determinations were made for use by the National Production Authority and other delegate

agencies in making individual allocations of the three controlled metals under the Controlled Materials Plan.

The individual third-quarter allotments have been "virtually completed," the D. P. A. announcement also said. It added that D. P. A. "is now summarizing and analyzing fourth quarter requirements and supply data preparatory to making fourth quarter allotments."

Senate Group Gets More Time for Transport Studies

The Senate has adopted Senate Resolution 154, thus extending until January 31, 1952, the time allowed its Committee on Interstate and Foreign Commerce for completion of the committee's general transportation studies.

The studies involved are the investigations started pursuant to Senate Resolution 50 of the previous Congress. They include the inquiry relating to surface transportation in which the Association of American Railroads made a comprehensive presentation at public hearings held by a subcommittee headed by former Senator Myers of Pennsylvania.

Long Island Transit Authority Organized

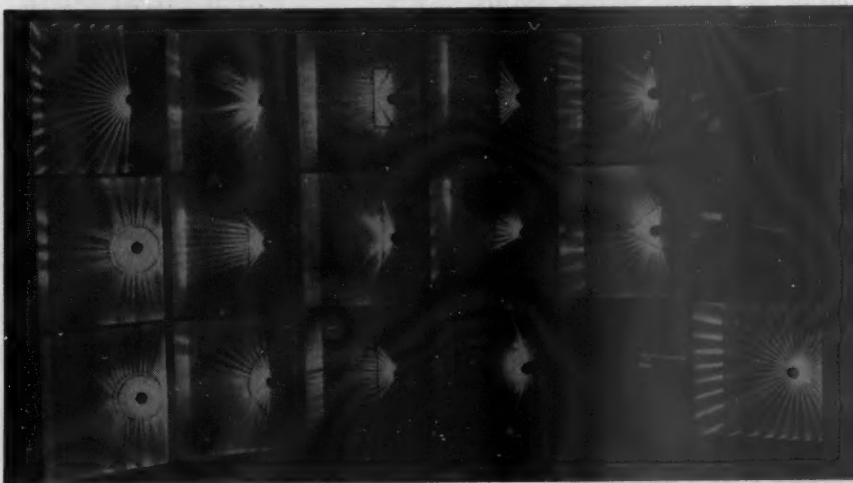
Members of the newly appointed Long Island Transit Authority—George E. Roosevelt, banker, of Oyster Bay, N. Y., and Tracy S. Voorhees, attorney, of Brooklyn—at their first meeting, on July 11, with William H. Draper, Jr., trustee of the Long Island Rail Road and chairman of the authority, received from Mr. Draper a comprehensive report outlining developments on the Long Island during the

past six months. The authority will have offices shortly at 270 Broadway, New York.

Mr. Draper's report discloses that the L. I.'s operating revenues for the first six months of 1951 have increased, but not sufficiently to keep pace with rising costs, resulting in a loss of approximately \$702,000 more during this period than in the same period of 1950. The report also reviews progress made in immediate and long-range safety measures, settlement of claims arising out of the Rockville Centre and Kew Gardens wrecks, operations and financial results, and possibilities for the future.

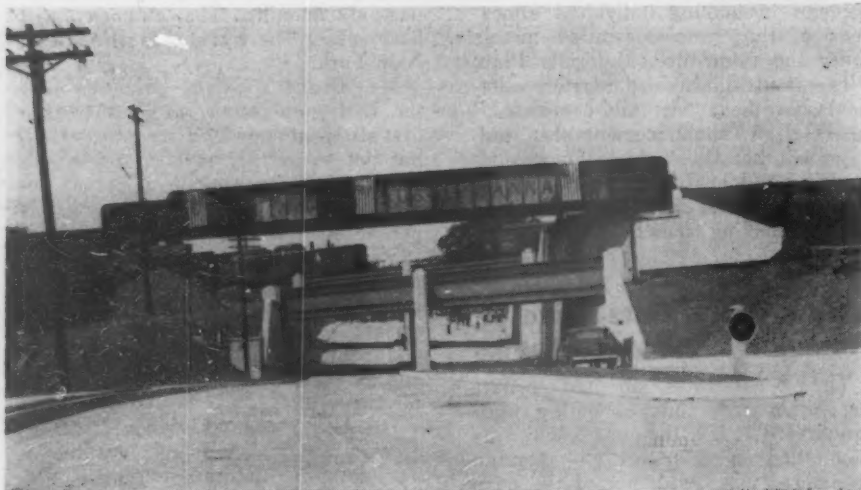
Discussing effect of recent rate increases, the report points out that "a considerable number of former patrons are unwilling or unable to pay the increased cost of railroad travel, and are at least temporarily using other forms of transportation. . . . So far increased fares are producing only about two-thirds of the increased revenue anticipated, or at an annual rate that is \$1,500,000 less than was expected."

The report calls attention to an improvement in operations during the past six months, as shown by the railroad's on-time performance record; states that "a drastic economy program had been instituted," with "additional economies from [more] use of diesel power" anticipated shortly; says that "discussions have been carried on with the Post Office Department looking toward a substantial increase in mail pay"; discusses freight revenues; outlines the Long Island's operating arrangements with the Pennsylvania, and the possibilities of obtaining additional revenue for the L. I. through revision of these arrangements; and points out that both the railroad and the



A LIGHT AND VISION INSTITUTE was formally opened by the Holophane Company, at its headquarters, 342 Madison Avenue, New York 17, on June 28. The institute is designed to aid both users and manufacturers of lighting equipment. Included in a large ex-

hibit room is the light control board shown in the illustration, and many other means of demonstrating prismatic control of lighting. Lighted pictures of actual installations border the walls, and beneath these pictures are samples of lenses and prisms



Walter A. Lucas

THIS UNUSUAL FOUR-WAY crossing, carrying the main lines of the Erie and the New York, Susquehanna & Western, and an interchange track, over Wagaraw road, Hawthorne, N. J., was opened June 6.

The single-track Susquehanna line uses the upper bridge, 126 feet long, which was erected in 1931. The double-track Erie line uses the lower bridge (foreground), which consists of two 53-foot girder spans. The single

interchange track between the two railroads is carried on an 83-foot bridge on an approximate level with and just visible behind the Erie structure. The entire project, including a new station illustrated on page 69 of *Railway Age* May 14, cost about \$800,000, shared by the railroads and by government agencies. The new bridges were fabricated by the Bethlehem Steel Company and erected by the Union Building & Construction Co.

riding public would be benefited if the L. I.'s Rockaway branch were incorporated into the New York City rapid transit system.

In conclusion, Mr. Draper's report states:

"In the public interest the Long Island Rail Road must continue to run, regardless of what method is necessary to bring this about.

"The next few months should fairly well determine what additional revenue can be realized from mail pay, from the proposed freight rate increase and from the Pennsylvania Railroad. Successful conclusion of the Rockaway negotiations would also materially affect the picture. The results of the present economy program, and the impact of any further inflation on wage and price levels should soon become clearer. The trend of revenues and expenditures in the near future will largely decide whether or not private ownership can continue. In the meantime, the new authority will doubtless be studying the situation and exploring the various possibilities.

"Under any plan to end to trusteeship—whether for private or public acquisition and operation—some overall arrangement must be negotiated or otherwise concluded with taxing authorities and with other creditors, including the principal creditor, the Pennsylvania Railroad. The capitalization contemplated under any such plan must be justified by the then existing revenues if the necessary approval of the federal court and Interstate Commerce Commission is to be obtained."

Freight Car Loadings

Loadings of revenue freight in the week ended July 7, totaled 588,246 cars, the Association of American Railroads announced on July 12. This was a decrease of 233,369 cars, or 28.4 per cent, compared with the previous

week; an increase of 34,336 cars, or 6.2 per cent, compared with the corresponding week last year; and a decrease of 7,075 cars, or 1.2 per cent, compared with the equivalent 1949 week.

Loadings of revenue freight for the week ended June 30 totaled 821,615 cars; the summary for that week, as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS			
For the week ended Saturday, June 30, 1951			
District	1951	1950	1949
Eastern	145,326	145,763	110,788
Allegheny	172,795	166,492	116,263
Poconchos	60,869	57,190	19,018
Southern	125,412	121,585	92,117
Northwestern ..	133,875	116,542	129,812
Central Western ..	125,437	111,525	118,424
Southwestern ..	59,901	64,223	57,760
Total Western Districts	317,213	292,290	305,996
Total All Roads	821,615	783,520	644,182
Commodities:			
Grain and grain products	44,293	48,935	70,642
Livestock	6,567	6,274	7,470
Coal	146,756	144,843	23,177
Coke	17,195	14,817	9,465
Forest products ..	47,207	45,531	36,708
Ore	90,640	73,042	77,995
Merchandise l.c.l.	74,358	79,769	91,049
Miscellaneous ..	394,599	370,309	327,676
June 30	821,615	783,520	644,182
June 23	832,942	809,971	802,941
June 16	826,239	805,876	649,351
June 9	813,326	796,041	808,156
June 2	744,644	709,896	698,824
Cumulative total 26 weeks	19,917,404	17,884,750	18,737,082

In Canada.—Car loadings for the week ended June 30 totaled 86,036 cars compared with 84,741 cars for the previous week and 72,608 cars for the corresponding week last year, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
June 30, 1951	86,036	33,803
July 1, 1950	72,608	32,918
Cumulative totals for Canada:		
June 30, 1951	2,049,525	924,518
July 1, 1950	1,867,071	799,495

Kansas Flood Hits Service On Four Roads

Heavy storms following a prolonged and unseasonable period of rain have caused extensive damage in the watersheds of several rivers in central Kansas and have seriously affected both freight and passenger services of the Union Pacific, the Missouri Pacific, the Santa Fe and the Rock Island throughout the state. According to late reports at *Railway Age* press time, the most seriously affected areas are Kansas City, Kan., Manhattan, Topeka, Junction City, Ottawa, Strong City, Florence and Marion. Periodic showers are continuing to fall and it is expected that the rivers may not crest before July 21 or 22. Passenger services of the Santa Fe and the Rock Island have been particularly hard hit with a number of important trains stranded enroute and subsequent services annulled. Here is a brief run-down of the flood conditions as of 10:00 A.M. July 12:

Union Pacific.—Yards at Manhattan flood. Water over the tracks and surrounding freight house at Junction City. All vulnerable spots east of Topeka being sandbagged in effort to maintain service. The Kansas City-Denver line is out between Salina and Junction City. The streamliner "City of St. Louis" being operated to Topeka and then detouring via Marysville and Hastings to Omaha-Salt Lake City main line. Other passenger trains from Kansas City operated only as conditions permit. "A million places on branch lines are out," according to a company spokesman.

Missouri Pacific.—Seven feet of water block Kansas City-Pueblo, Colo., line at one point and many areas around Kansas City under water. Communications—both by company telephone and telegraph and the Bell system—with operating headquarters in Osawatamie entirely cut off. Certain schedules of the "Colorado Eagle" have been annulled and units on the road detouring. The Joplin division has also experienced heavy rains and service has been delayed by high water at least one point. "The Sunflower" being detoured on the St. Louis-San Francisco via Neodesha. Through freight trains from the west being detoured via Wichita.

Rock Island.—The "Golden State" annulled, the "Imperial" operating as a stub train only between Chicago and Kansas City. One eastbound unit of the "Golden State" detoured via Colorado Springs only to run into an entirely new flood situation on the Rock Island's Colorado Springs-Kansas City line at Rexford. All freight services in the area are at a standstill. Units

of "Twin Star Rocket" and the "Imperial" stranded at McFarland and passengers transported to Kansas City by bus. Three to four feet of water in the U.P.-C.R.I.&P. station in Topeka. No telephone or telegraph communication with any point west or south-west of Kansas City.

Santa Fe.—Six passenger trains are reported to have been stranded at Emporia. Extensive use being made of radio announcements by Chicago stations to advise the public that passengers on these trains are safe and well cared for. Some of these trains—namely the "El Capitan" and the "Chief" are again moving toward Chicago. Out-bound trains are being operated via Galesburg, thence via C.B.&Q. to Denver and South via Santa Fe rails to the main line at La Junta, Colo.

None of the roads have reported any injuries or important inconvenience to stranded passengers. Highways throughout the affected area are described as "hopeless" by at least one press dispatch.

Separate Air Subsidy, Then Drop It, A.A.R. Advises

Legislation designed to provide for separation of outright subsidy from air mail payments should be only the first step toward complete elimination of direct air line subsidy in the near future, the Senate Interstate and Foreign Commerce Committee was told on July 10.

"There is no longer any basis for maintaining that the air line industry is an infant industry that requires fostering and developing through government aid," Gregory S. Prince, assistant general counsel of the Association of American Railroads, said in testifying on bills to separate air mail pay from subsidy.

"It is highly important in the interest of developing, coordinating and preserving a sound rational transportation system that subsidies to air lines be eliminated as promptly as possible," he declared.

Mr. Prince told the committee that "it would appear that the principle of separation of subsidy and mail pay is no longer in controversy and that it has become accepted that there should be such a separation as promptly as possible." He also said that he could see no logical reason for relating the compensatory air mail rate to the average revenue per ton-mile for the transportation of passengers.

Mr. Prince also referred to proposals that would assign air mail subsidies to specific localities and said that they would probably lead to "log-rolling for air subsidies of a magnitude even greater than now found with respect to the authorization of inland waterway projects."

"An approach that has that possibility should be avoided at all costs, for the pressure of local interests might lead to indefinite retention of existing or even greater subsidies, to

the unfair disadvantage of the railroads as competitors with the air lines for mail, passenger and other traffic," Mr. Prince continued.

The bills advocated by Mr. Prince were those which directed the Civil Aeronautics Board to establish fair and reasonable rates of compensation for the transportation of mail by aircraft and specified that the rates so determined should be based upon the reasonable and necessary costs of rendering the service. The provision requiring the compensatory rate to be related to costs would, he said, make the situation for the air lines comparable to that of the railroads.

"Complete elimination of direct subsidies to the air lines is long past due," Robert M. Drysdale, Jr., executive vice-president of the Federation for Railway Progress, told the committee on July 11. The people represented by the federation "feel that the best and easiest way to put an end to these air mail subsidies is to make the law governing the establishment of air mail pay comparable to the law governing railway mail pay," Mr. Drysdale continued.

"Even if direct subsidies were eliminated," he added, "the air lines enjoy 'hidden' subsidies, quite apart from the subsidy hidden in mail payments, of about \$400 million per year. This means that today when anyone takes a trip by air and pays the air line six cents a mile, the taxpayers are 'kicking in' another four cents per mile to make the trip possible."

Referring to the railroads' Ex Parte 175 petition for authority to increase freight rates, Mr. Drysdale noted that

MORE NEWS ON PAGE 57

Additional general news appears on page 57 followed by regular news departments, which begin on the following pages:

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"five departments of the federal government have argued" that the proposed increases "should not be allowed." The F. R. P. executive then went on to ask the committee how it supposed "this contradictory policy appears to the millions of Americans who own rail shares or securities."

I.C.C. to Investigate Derailment

In a proceeding docketed as Ex Parte No. 183, scheduled to begin at the Hotel Morrison in Chicago on July 16, the Interstate Commerce Commission will investigate the July 7 derailment of an Atchison, Topeka & Santa Fe passenger train operating on Chicago, Rock Island & Pacific tracks near Utica, Ill. Commissioner W. J. Patterson and Examiner E. J. Hoy will preside.

SUBSIDIZED HIGHWAYS, "STATIC" RAILWAYS, INCREASE N. Y. TRAFFIC CONGESTION; "OBJECTIVE STUDY" PROPOSED

"An objective study . . . to appraise the present policy of allowing railroad systems to remain static, while concentrating investment on vehicular traffic arteries leading into Manhattan" is urged by the Regional Plan Association, Inc., of New York in its Bulletin No. 77, "Trends of Commuter Transportation in the New York Metropolitan Region, 1930-1950," which was made public on July 9.

Such a study, the association says, should be made either by the Port of New York Authority, or by "a special interstate commission" to be established "for this sole purpose"; it urges the governors of New York, New Jersey and Connecticut "to take such action as may be necessary to advance such studies and joint program."

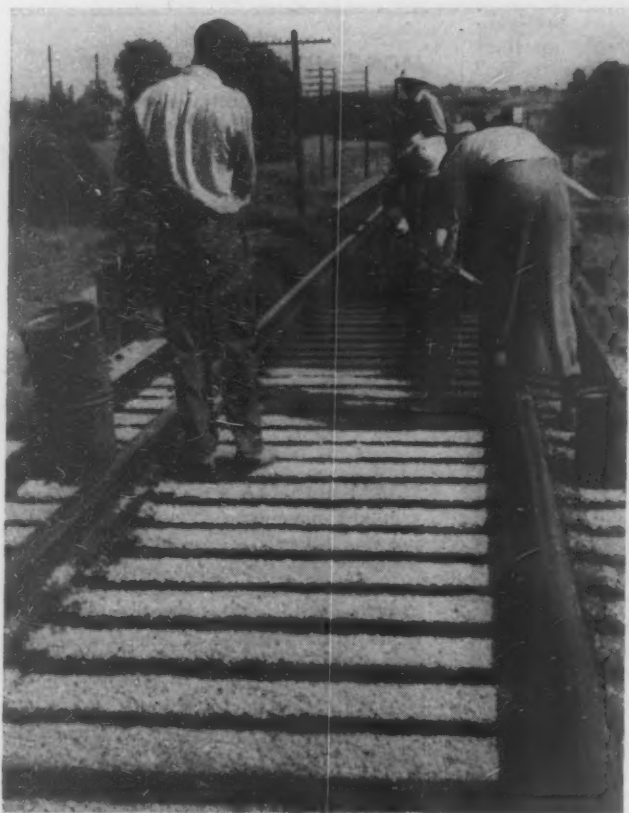
There is, the report declares, "little reason" to expect any great increase "in the foreseeable future" in commuting into the central business areas of New York City by any means of travel; but "this does not mean," it adds, "that the commuter transportation problem is solved."

"If use of railroads for commuting is permitted to decline in favor of motor vehicle commuting, traffic congestion in the region's central business areas and costs of relieving such congestion will increase out of all proportion to the number of persons transported."

The report finds, further, that past improvements in railroad commutation services "could not be shown to be self-sustaining"; that "there has been no public subsidy for railway improvement in the region"; and that "public subsidy for the region's highway, waterway and airport systems has been tremendous."

These and other conclusions are supported by an extensive study of commuter traffic in the New York area for the 1930-1950 period, which shows, among other things, that the number of railroad commuters has decreased by 1.8 per cent over the 20 years, while the regional population outside New York City was increasing by 28 per cent.

A more complete summary of the association's study will appear in an early issue of *Railway Age*.



Left—Applying a relatively new type of fire-protective coating to the deck of a timber-pile trestle. First, a special bridge primer is applied; second, a special heavy-duty bridge coating is sprayed or brushed onto the ties and timber guard rails; and third, a small-size aggregate, such as pea-size



washed gravel, is applied to the coated surfaces. Right—The small-size aggregate is applied thickly to the special coating which consists of asphalt combined with asbestos fiber and tung and other vegetable oils. It is said wood so treated may char, but will not burst into flames and burn

A Plea for More and Better Fire Protection for Bridges

Written specially for *Railway Age*

By L. R. MORGAN
Fire Prevention Engineer
New York Central System
Detroit, Mich.

Substantial direct losses, and larger indirect losses from traffic delays and re-routing, are reasons this matter deserves more attention

According to the Fire Protection and Insurance section of the Association of American Railroads, fire damage to railroad bridges in the United States amounted approximately to \$4,300,000 over the five-year period ended with 1950. The significant thing in connection with this figure is that most, if not all, of the individual fires contributing to it could have been prevented. This is so be-

cause of the great strides made in recent years in the technique of protecting bridges against fire. And yet there has been no evidence of a concerted rush on the part of railroad managements to take advantage of the protection now available—progress, yes, but rush, no.

Conversations with many bridge maintenance officers have indicated that these men are eager to take advantage of this protection. The difficulty is that, as a whole, they have been unable to sell their managements on the large potential savings possible from the investment required to achieve the protection.

Year	Number	Loss	Percentage of All Railroad Fire Losses
1950	209	\$1,034,007	10.60
1949	287	\$95,419	6.80
1948	273	\$83,354	8.00
1947	262	\$55,957	3.37
1946	352	\$1,446,429	13.30
Total	1,383	\$4,315,166	
Annual Average	277	\$863,033	8.41



The new fire-protective coating has been applied on about a half million lineal feet of bridge decks on 19 railroads

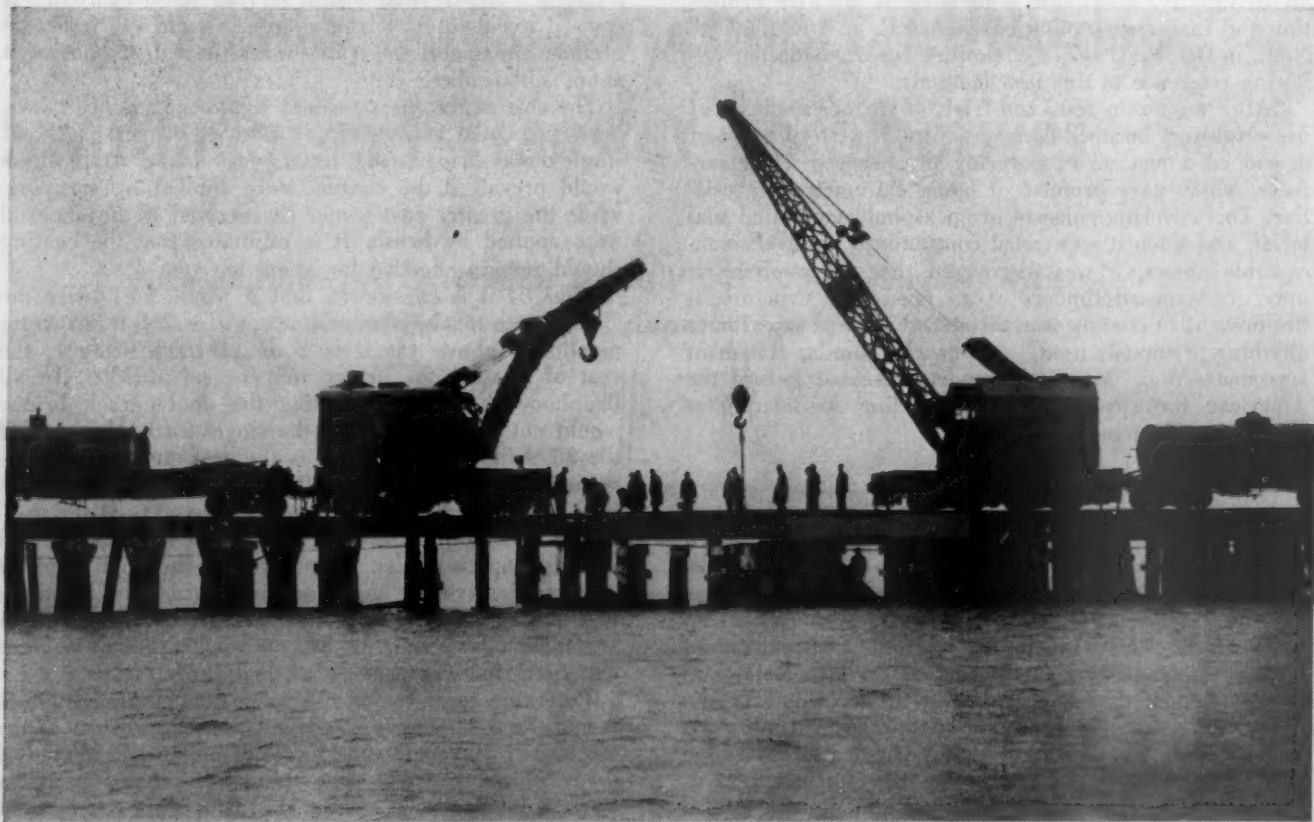
This is true in the face of the alarming fact that there was an average of 277 damage-inflicting railroad bridge fires per year across the nation during the five-year period ending with 1950, which resulted in damage to road structures totalling \$4,315,166. The average annual loss caused by these fires was \$863,033—8.41 per cent of the average annual "direct" loss caused by all railroad property fires in the nation.

Indirect Damage Much Larger

It would be difficult to estimate the amount of the indirect damage caused by the snarling of traffic and schedules as a result of the fires, but it must have been many times the actual damage. These indirect losses are the big threat that bridge fires hold for the railroads, as all of us in railroading know. Alongside them the cost of repairing or replacing burned portions of structures is often insignificant. Hence, even though the actual dollars-and-cents figures of direct loss provide case enough for better protection of bridges against fire, the ever-present threat of great indirect loss is what leads many to believe that the problem of protecting bridges against fire deserves greater attention from management.

Several methods of retarding the spread of fires on bridges and trestles have been in use for varying periods of time. These include the shielding of pile bents with asbestos-cement boards, the use of fire-resistant construction at intervals in long trestles, and the use of metal coverings for protection against the ignition and spread of fires.

In recent years still another method of protecting bridges against fire has been developed and introduced on a broad scale, which gives promise of producing



Recognizing the need for fire protection in such an important structure as its 5.9-mile long timber trestle across Lake Pontchartrain near New Orleans, La., the Southern, several

years ago, installed two positive fire breaks in a 1,500-ft. length of the trestle that was rebuilt. Each fire break consists of two precast concrete spans on concrete pile piers



Example of a timber-trestle fire break consisting of curtain walls of corrugated asbestos-cement sheets

highly effective results. At a meeting of the Fire Protection and Insurance section of the A.A.R. at Atlantic City, N. J., in October 1949, a committee report made the following reference to this new method:

"After numerous tests and trials of various methods of fire protecting an open-deck structure, a western railroad developed a method of covering the exposed wood surfaces, which gave promise of being extremely fire resistant. This covering consists of an asphalt compound material, and when it was tested continuously on every conceivable object, it was discovered that, by applying it upon the exposed timbers of an open-deck structure, a fire-preventive coating was formed which was superior to anything previously used." A somewhat similar statement was made in a committee report presented before the American Railway Bridge and Building Association at Chicago in September 1949.

Effectiveness of Method

The new method has to date been applied on about a half million lineal feet of bridge decks on 19 railroads. It is reported that no fires have occurred on bridge areas protected by the process. A few fires have broken out on bridges or trestles with the fire-retardant coating, but in each case the blaze was determined to have started in spots not coated. In these incidents, according to the railroad officers concerned, the coating seemed to retard the spread of fire. The maximum damage reported as the result of these fires was only \$200. One railroad tells of an instance in which coated ties were undamaged by a boiler explosion that occurred immediately above them. The railroad that collaborated in the development of the process has now applied it to more than 350,000 lin. ft.

of bridges, and plans ultimately to have all of its open-deck bridges so protected.

An experience that one railroad had with the use of the process to defend a vital 266-ft. bridge from fire damage will bear relating. This open-deck double-track structure had been plagued by several small fires. There was always the threat that one of these fires would succeed in making the bridge impassable for a time. Such an eventuality would create a difficult situation because the bridge is located in a large midwestern city and is crossed by 94 regularly scheduled trains every day. If it should become impassable for even a short time, losses caused by delay and rerouting of freight and passenger traffic could easily run into large figures.

In May 1949, it was decided to treat the deck of the bridge by the new process and to observe results for a year. Not a single fire has been reported on the bridge since. As a result of this experience the railroad on which the bridge is located treated seven key bridges in the same manner in August 1950. These applications were ordered only after the railroad's fire prevention engineer inspected the "test" bridge after the first year and found that the fire shield was fully effective.

Two Reasons for Protection

The seven bridges ordered treated are crossed by an average of 85 trains daily. While fire had been reported on only one of them during the previous year, they all have two characteristics in common which require that they be given the best possible fire protection available. First, long detours—an average of 382 miles each—would be required if fire should render any of them impassable for any length of time. Second, each of the bridges would be extremely costly to replace.

Of these seven bridges the structure with the heaviest traffic is a 265-ft. span which, serving seven railroads, is crossed by about 125 trains daily. Should the structure become impassable the trains would have to be detoured about 1,000 miles.

The cost of the fire-retardant treatment has been variously estimated at from 75 cents to \$1.00 per lin. ft. of single-track bridge, the lesser cost being that which would prevail if the coating were applied by spraying, while the greater cost would be involved if the material were applied by brush. It is estimated that the coating should remain effective for about ten years.

Thus, if it is considered that it would cost twice the 75-cent rate to give the treatment to the 266-ft. structure mentioned above (as it is a double-track bridge), the cost of treating the bridge may be set at \$399. In all likelihood the cost of treating the double-track bridge would not be twice that for the single track. However, if the \$399 figure is assumed as the cost, and if the treatment remains effective for 10 years, the annual cost is a little less than \$40.

In brief, the process consists first of the application of a coat of special bridge primer; next, the application of a special heavy-duty bridge coating (a blend of premium asphalt combined with asbestos fiber and tung and other vegetable oils); and, finally, the application of a clean aggregate such as pea-size washed gravel.

Referring again to the committee report quoted above, it had the following to say about the effectiveness of the treatment: "The combination of compound and aggregate holds white-hot brake shoe splinters or burning fusees away from the wood so that they will chill or burn out without setting fire to the wood. Even when the heat is so intense that it will char the wood below the protecting coat, the wood will not burst into flames and burn."



Davenport-Besler 110-ton, 1,000-hp. switching and transfer locomotive in service on the Rock Island

Rock Island Buys Davenport 1,000-Hp. Switching and Transfer Locomotives

Each unit has two Caterpillar D397, V-12, 500-hp. engines with scavenging blowers—Electrical equipment is by Westinghouse

The Davenport Locomotive Division of Davenport-Besler Corporation, Davenport, Iowa, has delivered to the Rock Island two 110-ton, 1,000-hp. diesel-electric locomotives of the B-B (0-4-4-0) type. The locomotives, which are arranged for switching and transfer service, are the first to be equipped with two Caterpillar D-397, V-12 engines.

Each engine is equipped with a scavenging blower and develops 500 hp. at 1,200 r.p.m.

The two main generators are Westinghouse Type 198-C four-pole, direct current, separately excited from an auxiliary generator unit for each. These generators are self-ventilated with the fans built in at the coupling end. Armatures are carried on antifriction bearings. Rigid bolting of the generators to the engine subbase gives a unit assembly.

Westinghouse Type YG-49-C auxiliary generators, mounted on top of each main generator and belt-driven from the generator shafts, are provided for excitation and battery charging.

The four traction motors are Westinghouse Type 361-DF series-wound traction motors with 14:68 single reduction gearing. Each motor is carried on the axles by bronze bearings, and on the trucks by a spring nose suspension to the bolsters.

The Various Control Systems

Operator control is single-station, remote, electromagnetic with electropneumatic throttle operation. Two motors are connected permanently in parallel with each generator, and each motor field is provided with a paral-

lel shunt. Transition to the shunt field connection is automatic and is accomplished without power interruption.

Reduced generator voltage is provided on the first throttle position and can be adjusted to suit locomotive operating conditions. Wheel slip protection is incorporated. Forced ventilation of the motors is achieved by two engine-driven blowers via ducts through the center plates and truck bolsters.

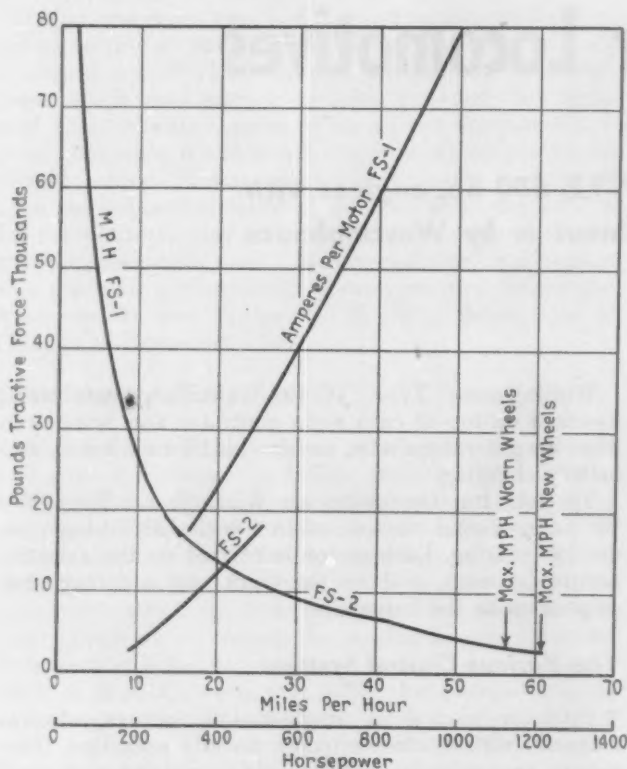
Westinghouse straight and automatic air brakes, Schedule 6-SL, with 60,000 cu. in. of main reservoir capacity are provided, together with two-stage, two-cylinder, air-cooled compressors with a capacity of 87 c.f.m. each. A mechanical overloader maintains the required air pressure.

Two 9-in. by 7-in. duplex brake cylinders are installed on each truck. The foundation brakes are fully equalized to provide equal brake shoe pressures at each wheel. The hand brake is applied to one truck only.

The Engine Control System

Each engine is equipped with an Autoload control system that automatically matches the electrical load to the power the engine can produce. The three principal functions of the Autoload are to prevent the pulling down of engine speed whenever the engine is unable to develop full power, to reduce generator output to normal when the generator is cold, and to extend the constant-horsepower range of the generator by raising the unloading voltage. The three main parts of the system are a governor-controlled pilot valve, a metering valve and a hydraulically operated carbon-pile rheostat.

The carbon-pile rheostat is made so that hydraulic pressure increases the resistance. It is connected in series with the exciter four-pole field. The pilot valve opens if the engine speed drops even though the injector rack is in the full-load position. Oil passes through the meter-



Speed-tractive force curve for the Davenport-Besler 1,000-hp. switching and transfer locomotive

ing valve to the carbon-pile rheostat and reduces the engine load by reducing the excitation of the exciter four-pole field. The purpose of the metering valve is to prevent hunting when the Autoload control is in operation.

General Construction

The main frame and bumpers are fabricated from heavy rolled-steel slabs and are of welded construction. Jacking pads and lifting arrangement are installed at the outside ends of the bolster at the side sill, and jacking pads are incorporated in the side sills near the ends of the locomotive to permit removal of the trucks sideways.

GENERAL CHARACTERISTICS OF THE DAVENPORT-BESLER 1,000-HP. DIESEL-ELECTRIC SWITCHING AND TRANSFER LOCOMOTIVES

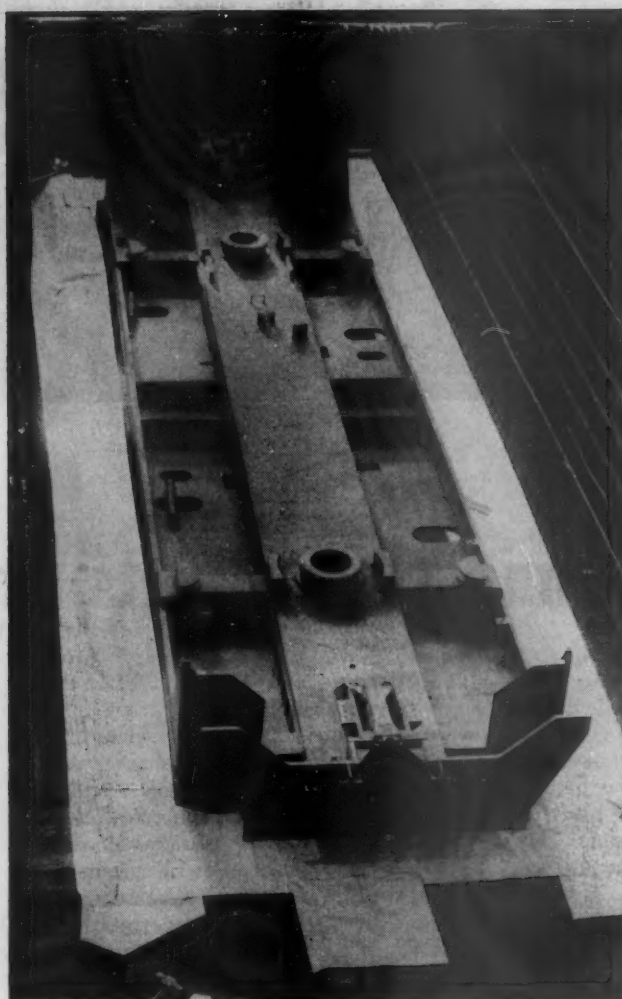
Locomotive class	B-B (0-4-4-0)
Diesel engines:	
Two, V-12, supercharged,	
Caterpillar D397, hp., each	500
Driving motors:	
Number	Four
Type	362-DF
Wheels, diameter, in.	40
Journal bearings, friction, size, in.	6 1/2 x 12
Wheel base, ft.-in.:	
Truck	8-0
Between truck centers	22-0
Total locomotive	30-0
Total weight, lb.:	
In working order	225,400
On drivers	225,400
Maximum overall dimensions, ft.-in.:	
Width	10-0
Height	14-6
Length (inside coupler knuckles)	45-6
Minimum radius curvature, ft.:	
Locomotive alone	70
With train	150
Supplies:	
Fuel oil, gal.	650
Lubricating oil, gal., per engine	110
Engine cooling water, gal., per engine	70
Sand, cu. ft.	27
Performance:	
Gear ratio	14:68
Starting tractive force (at 25 per cent adhesion), lb.	55,000
Tractive force, continuous, lb.	34,000
Speed at continuous rating, m.p.h.	7.5
Maximum speed, m.p.h.	60

PARTIAL LIST OF MATERIALS AND SPECIALTIES ON DAVENPORT-BESLER 1,000-HP. SWITCHING AND TRANSFER LOCOMOTIVES

Trucks	General Steel Castings Corp., Granite City, Ill.
Truck coil springs and semi-elliptic springs	Union Spring & Mfg. Co., New Kensington, Pa.
Driving wheels	Standard Steel Works Div., Baldwin Locomotive Works, Burnham, Pa.
Journal bearings	National Bearing Div., American Brake Shoe Co., St. Louis
Journal thrust bearings	Magnus Metal Corp., New York
Journal wedges	Clifford-Jacobs Farging Co., Champaign, Ill.
Air brakes; brake rigging	Westinghouse Air Brake Co., Wilmerding, Pa.
Hand brake	National Brake Co., New York
Couplers; journal boxes	National Malleable & Steel Castings Co., Cleveland
Draft gear	W. H. Miner, Inc., Chicago
Electrical equipment	Westinghouse Electric Corp., Pittsburgh
Batteries	Electric Storage Battery Co., Philadelphia
Diesel engines	Caterpillar Tractor Co., Peoria, Ill.
Traction motor blowers	American Blower Corp., Detroit
Speed indicators	Weston Electrical Instrument Co., Newark, N. J.
Engine-water heaters	Perfection Stove Co., Cleveland
Lubricating oil filters	Michiana Products Corp., Michigan City, Ind.
Oil coolers	Ross Heater & Mfg. Co., Buffalo
Mufflers	Maxim Silencer Co., Hartford, Conn.
Compressors	Gardner-Denver Co., Quincy, Ill.
Compressor and blower belts	Dayton Rubber Co., Dayton, Ohio
Radiators	Madine Mfg. Co., Racine, Wis.
Fuel tank gages	Jerguson Gage & Valve Co., Somerville, Mass.
Fuel filler and vent	Protectoseal Co., Chicago
Auxiliary generator belts	Gates Rubber Co., Denver
Lights	Pyle-National Co., Chicago
Cab heaters	Kysor Heater Co., Cadillac, Mich.
Operators' seats	Coach & Car Equipment Co., Chicago
Window wipers	C. A. Sprague Devices, Inc., Michigan City, Ind.
Sanders	United States Metallic Packing Co., Philadelphia
Radiators	Madine Mfg. Co., Racine, Wis.
Internal bell ringers	Viloco Railway Equipment Co., Chicago
Air horn	Leslie Co., Lyndhurst, N. J.
Footboards and running-board steps	Morton Manufacturing Co., Chicago

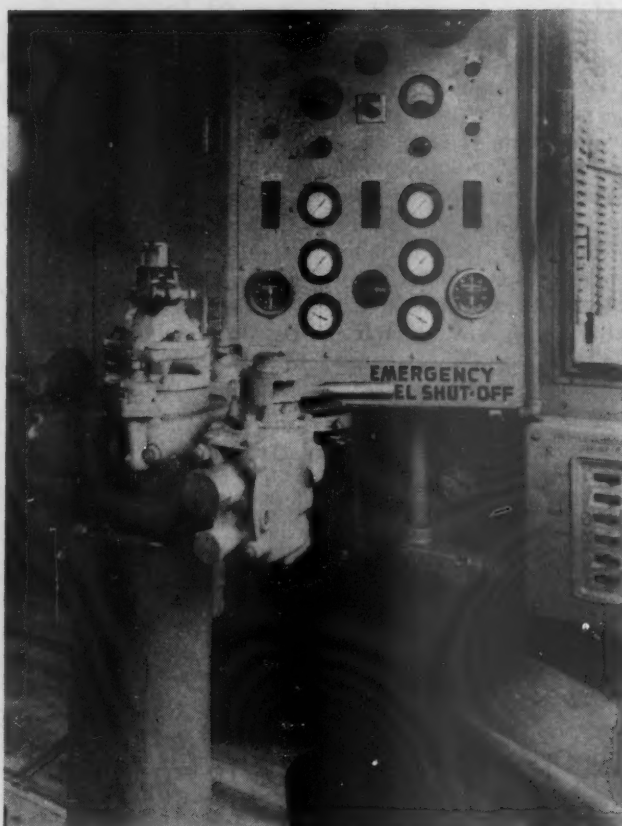


Above left—One of the two Caterpillar D397 engines in place on the underframe



Above right—Heavy rolled-steel slabs are welded together to form the main frame and bumpers

Right—The operator's control cab



The trucks were furnished by General Steel Castings and have a rigid bolster. The center plates have renewable liners to compensate for wear.

The steel cab has two doors, one at the right back and one at the left front. Side windows are sliding steel sash with awnings. The front and rear windows and door sash are stationary. All glass is shatterproof, and the front and rear windows are equipped with air push window wipers. The cab is insulated and equipped with two hot-water cab heaters which use the engine cooling water as a source of heat, regulation being through the rheostat switches. For keeping engines warm during cold weather storage and standby periods, two kerosene-burning heaters are provided, with fuel supplied to both heaters from one 10-gal. tank.

Auxiliary drives are so arranged that each end is entirely independent of the other and the locomotive may be operated with one engine and generator and still have all necessary auxiliaries in operation.



Left—Canadian-built Type F-7 diesel-electric locomotive on exhibit in Toronto on June 25, at the 1951 Summer General Meeting of the American Institute of Electrical Engineers. With the locomotive are F. L. Jones, supervisor of diesel equipment, Central region, and W. D. Taylor, electrical engineer, Central region, of the Canadian National. The locomotive includes units 11 and 12 of an order of 28

Facing page—Converted 3,000-volt d.c. electric locomotive in service on the 600-volt d.c. electrified territory of the New York Central between the Grand Central Terminal and Harmon, N. Y.

Some New Slants on Electric Traction

Economics and the future aspects of heavy electric traction were the subject matter of four papers presented at the Summer General Meeting of the American Institute of Electrical Engineers held in Toronto June 25-29. Other papers dealt with the conversion of a 3,000-volt electric locomotive for use on 600 volts d.c., with mercury-arc rectifiers, and with Toronto's new subway system. The papers were sponsored by the Land Transportation Committee of the A.I.E.E., and the meetings were conducted by Chairman H. F. Brown, electrical engineer of the New York, New Haven & Hartford.

Economics—Dieselization vs. Electrification

"Economic Factors Which Influence Dieselization and Electrification" is the title of a paper presented by Charles Kerr, Jr., of Westinghouse Electric Corporation. Mr. Kerr called attention to the use of different kinds of motive power in various countries of the world and showed that in each case the choice was a logical one, depending upon local conditions. By way of illustration, he offered the following:

"A comparison between current fuel prices in the United States and those in a foreign country, having an extensive electrified service, is representative of the different conditions which may exist throughout the world:

	U. S.	Foreign
Coal per ton (2,000 lb.)	\$5.34	\$16.80
Diesel oil per gal.	9.09¢	16.1¢
Electricity per kw.-hr.	1.061¢	0.667¢

With these fuel prices, the relative cost of producing 1,000 hp.-hr. of useful work at the locomotive driving wheels is as follows:

	U. S.	Foreign
With coal	\$1.06	\$3.38
With diesel oil	\$0.80	\$1.43
With electric power	\$1.06	\$0.67

In the United States the average cost of electric power is 133 per cent that of diesel oil, while in the selected foreign country it is only 47 per cent that of diesel oil. In other words, the fuel situation in the foreign country is roughly 2-3/4 times more favorable to electric operation. Conditions similar to these might be cited for other countries which have limited coal and oil resources."

In explaining the adoption of the diesel in this country, Mr. Kerr said:

"Most major railroads in North America are private-

Economics and innovations in electrification and dieselization discussed by electrical engineers in Toronto

ly owned corporations which must have profitable operation for their existence. At the close of World War II, these railroads were faced with rapidly rising operating expenses which were not accompanied by a proportionate increase in operating revenues, a combination that produced a very unfavorable operating ratio. Motive power on the railroads consisted predominantly of reciprocating steam locomotives whose operation was handicapped by rising fuel costs, and even worse, by labor troubles in the coal industry which caused, on several occasions, serious curtailment of railroad operations and threatened continuation of railroad service. These conditions forced the adoption of a new type of motive power capable of being installed in a short period of time; and a type which would provide immediate operating economies and immediate relief from troubles incident to the use of coal as the major railroad fuel. The diesel-electric locomotive was the logical answer to the problems which beset these railroads.

"The diesel, by its use of the electric transmission, provides a locomotive capable of delivering constant horsepower at the rail over the normal working range. This speed-tractive force characteristic permits larger trains to be hauled on faster schedules, eliminates 'double-heading' of locomotives, and reduces helper service. These qualities provide operating economies of considerable magnitude. They are the operating benefits of any locomotive which incorporates the electric drive."

Electrification, he said, provides a broader range of possible fuels, and, he added, "Electric energy may be produced from residual oils, natural gas, or coal in large steam stations, and in many localities from water power. On the contrary, diesel operation is restricted to diesel fuel which is often in scarce supply and high in price. When available sources of fuel are restricted in volume or in kind, electrification will provide an insurance against



fuel shortages or adverse prices to a greater degree than any other type of railroad motive power."

Mr. Kerr gave recognition to the gas-turbine locomotive and said it offered promise for competition with the larger diesels. In conclusion, he said:

"Wherever it can be economically justified by traffic density or favorable fuel sources and prices, electrification remains, as it has in the past, the finest method yet devised for operation of the world's major rail systems. By its use, a higher standard of service can be produced, the maintenance expense lowered, and in many parts of the world, a decided economy affected in the cost of fuel or energy. Unfortunately, conditions in North America have made it impossible to expand electric operation. The trend in this area, nevertheless, should not prejudice the views of railroad managements elsewhere, who must operate under radically different economic conditions.

"At the moment, two types of power are available with assured background of experience—the straight electric and the diesel-electric. Each type can be built to give a most creditable performance. The important factor is to see that each is applied where conditions are suited for best overall economy."

Discussion

P. A. McGee, consulting engineer, New York, in a detailed discussion of Mr. Kerr's paper, termed Mr. Kerr's presentation of the position of diesel motive power on the railroads altogether too apologetic. He said the explanation for the wholesale adoption of diesel power on our American railroads is the large economic advantage of this type of power. The diesel, he asserted, is cheaper to buy. A diesel locomotive costs less per horsepower than the thermal plant required with electrification.

"It is more flexible in operation permitting large assignment and crew savings.

"Diesel power saves in maintenance and servicing expenses. It is thermodynamically the most efficient unit available.

"It gives a large fuel economy when diesel fuel is available.

"In this country, the out-of-pocket expenses with diesel locomotive operation are less than half those of steam operation in practically all regions.

"It is a matter of passenger-car-mile and freight-ton-mile performance required to determine the period over which the diesels will pay for themselves."

He concluded with the view that with the progress of the automotive industry and worldwide economic dependence on liquid fuel, coupled with the very promising

developments of processes for producing liquid fuel from solid fuel, the diesel locomotive deserves a more thorough understanding by foreign railroads and those interested in their development.

D. R. MacLeod of General Electric Company commended Mr. Kerr for being realistic. He said the diesel has been doing a wonderful job and has given railroad managements what they have been looking for in low cost operation and maintenance. He said it is not enough to show minor advantages for electrification, but that radical improvements are necessary. The only advantage of electric traction that can be shown on the Pennsylvania, he said, is greater speed for the electric locomotives, and then, he added, operating restrictions, hot boxes and stuck brakes frequently make it impossible to realize this advantage.

Conflicting reports were made on costs. In one case, it was stated that maintenance costs of an electrified railroad had gone up while diesel costs have not. Countering this, figures from another source were given which showed diesel locomotive maintenance costs to be 65 cents per mile for diesel passenger road power, whereas the comparable figure for electric locomotives was 25 cents.

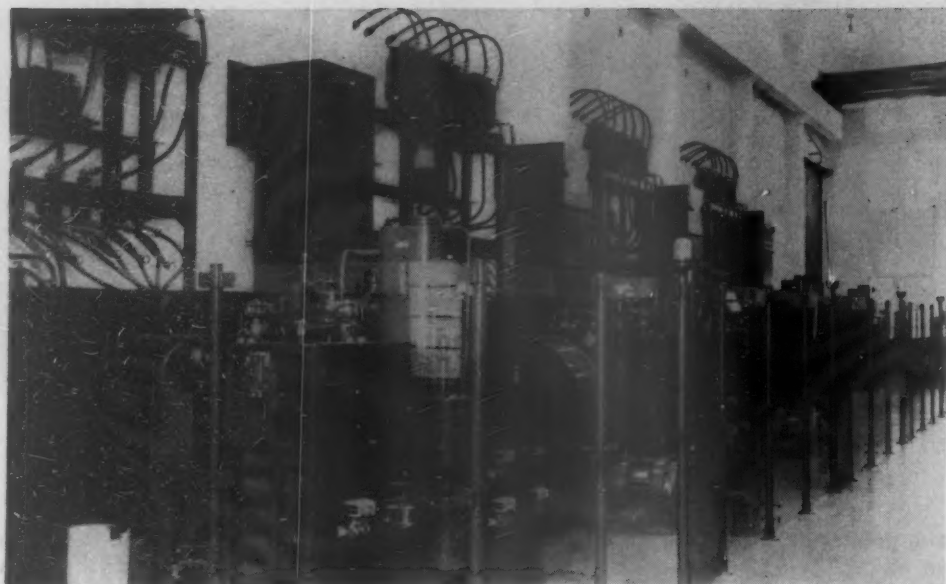
In summing up, Mr. Kerr said that Mr. McGee's discussion could be boiled down to a statement that the diesel-electric locomotive is best where diesel fuel is cheap.

Future Aspects of Electric Traction

A paper by G. Huldshiner, of the College of the City of New York, gave reasons why diesel-electric locomotives have replaced steam in this country to a great extent; whereas in Europe the tendency is still rather in favor of electrification. The reasons for this divergency, he said, are partly technical and partly reflect differences in ownership and financial structure of the railways, and in taxation practice. A state, he said, even if not too prosperous, will find money for its railways, whereas a private corporation, mighty and powerful as it may be, but suffering from government subsidized competition and already heavily in debt, faces heavier interest charges and may have difficulty in securing sums sufficient for electrifying a part of its lines.

One very clear reason for the adoption of the diesel in this country, he said, is that oil is abundant and cheap; whereas the countries practicing full electrification in Europe have large resources of cheap water power, not too much coal, and very little oil.

As against the factors which discourage electrification in this country, Mr. Huldshiner points out the potential



Interior of the rectifier substation at Scheid, Brazil, showing the inverter and its auxiliaries in the foreground

value of such recent developments as the rectifier locomotive and other types which would permit the use of commercial frequencies on the distribution system, and dispose of the need for a special form of wayside power supply.

Fuel and Energy Sources

A paper "Economic Evaluation of Fuel and Energy Sources for Railway Motive Power," was presented by T. M. C. Martin of the Bonneville Power Administration. Mr. Martin called his contribution a very rough short cut for determining the possible value of electrification in any specific application. It would thus serve to dispose of the deterring influence introduced by the need for making an expensive detailed study in cases where it was not justifiable.

In substance, Mr. Martin provides a means whereby the known basic factors for a study can be dropped into a hopper, a crank turned and an answer produced; i.e., with a minimum of calculations, a close approximation of the results to be obtained from a detailed study can be obtained. An example of such a calculation is included in the paper.

Discussion of Mr. Martin's paper raised no disagreement with his method of procedure, except for the fact that no allowance was made for taxes on fixed property required for an electrification. This Mr. Martin explained was omitted since taxing methods vary so widely in different states.

W. A. Brecht of Westinghouse Electric Corporation presented a written discussion which showed that, at prevailing costs for diesel fuel, electrification can be justified only with very cheap power. Future trends in liquid fuel and power costs, he said, will determine the future of railroad electrification. He added that the probabilities are that the costs of liquid fuels will rise more rapidly over the next decade than those for electric power.

A paper on "Railway Electrification—a Prospective Consumer of Central Station Power," was presented by Llewellyn Evans of Tennessee Valley Authority. In this, Mr. Evans offered a means of disposing of perhaps 80 per cent of the contact system, including all of the complicated catenary construction. This he would accomplish

by equipping the electric locomotive with a large Silvercel storage battery—the battery to receive sufficient power by charging when under the overhead wire to run the locomotive over sections of line having no contact system.

Discussion developed some skepticism concerning the practicability of the scheme, but rewarded Mr. Evans for his originality of thought. The cost of such a battery, Mr. Evans said, would be about \$379,000. The silver, he said, can be reclaimed.

Olaf Stjernberg, of Nife, Inc., told of battery locomotives used in Sweden. He said that there they had found the nickel-cadmium battery to be best suited to locomotive application. Difficulties involved in having more than two batteries in parallel, and from current leakage when too many cells were connected in series, he said, limited the practical size of a battery locomotive to about 2,000 hp.

Toronto's new subway, now under construction and scheduled for completion by the end of 1953, was described in a paper by J. G. Inglis of the Toronto Transportation Commission. The subway will be a double-track railroad, 4.56 miles long, and will connect with a radiating network of bus and trolley coach lines at its northern terminal.

Cars will be a modified form of P.C.C. cars, 10 ft. wide over the side sheets. There will be 130 cars, each having three doors on each side. Track gage is 4 ft. 10 $\frac{7}{8}$ in. Base schedule speed will be approximately 18 m.p.h. with a one-way running time of 15 minutes. The maximum capacity of the system will be 40,000 passengers per hour in each direction.

The conversion of a 3,000-volt d.c. locomotive, originally designed for use in the Cleveland Terminal, to a 600-volt d.c. locomotive for high-speed passenger service on the main line of the New York Central out of Grand Central Terminal, New York, was described in a paper by F. D. Gowans of General Electric Company. A new motor was designed for this purpose and completely new control equipment installed. High-speed, axial-flow blowers are used to ventilate the motors and similar blowers cool the accelerating resistors. The new motor weighs 12 per cent less and has 32 per cent more tractive force and 53 per cent more speed than the original motor designed 20 years ago. To allow for track curvature in the New

(Continued on page 51)

Ever See a Truck Marked Like This?

**Chances are such trucks aren't
contributing anything like this
much to highway costs**



A trucking firm's vehicle was recently observed, carrying a sign which stated that the annual taxes on the truck totaled \$3,015.97—the implication apparently being that this truck was making a pretty generous contribution to highway expenses. So the president of a New England firm asked the trucking company for a breakdown of the taxes paid on one of their over-the-road truck combinations. The trucker's response, showing his version of the breakdown of taxes, was checked against his annual report to the Interstate Commerce Commission. The I. C. C. report indicated that the trucking firm paid \$1,283.53 in road use taxes per line-haul truck.

A comparison of what the trucking firm claimed to pay, as compared with its report to the I. C. C., follows:

	Taxes per line-haul truck according to trucker's letter	Taxes per line-haul truck according to trucker's report to I.C.C.
Fuel & oil taxes	\$1,370.39	\$ 550.17
License & reg. fees	619.17	733.36
<i>Total road-use taxes</i>	<i>1,989.56</i>	<i>1,283.53</i>
Ad valorem taxes	199.25	83.63
Social security & related taxes	398.50	398.50
Excise taxes (tires, tubes, parts, etc.)	428.66 (Other taxes)	3.00
<i>Total, all taxes</i>	<i>\$3,015.97</i>	<i>\$1,768.66</i>

The only taxes paid directly for the use of the highways are fuel and oil taxes and license and registration fees. The trucker said they amounted to \$1,989.56. His

report to the I. C. C. showed they amounted to \$1,283.53 per line-haul vehicle.

The above figures are the average on each of the line-haul trucks which the trucker reported as owned. In addition it leased 50 line-haul vehicles. The firm also has trucks in intra-city service and purchases transportation service from other truckers.

This trucker, like most other trucking firms, adds in its excise taxes on tires, tubes, parts, and even the purchase tax on new vehicles, to augment the total of taxes shown—but federal excise taxes have no relation whatsoever to highway monies. The I. C. C. report does not show excise taxes as a separate item. The commission merely considers excise taxes as part of the purchase price of tires, tubes and spare parts.

The only true highway-user fees which the trucker paid averaged \$1,283.53 per line-haul vehicle. To move a ton of revenue freight 100 miles these highway use payments averaged about 8.4 cents. But the trucker's report to the I. C. C. showed a *net profit* of 58.8 cents for each ton of revenue freight which the firm hauled 100 miles. This may be compared with the railroads' net return of 4.1 cents for moving one ton 100 miles.

On the basis of both owned and leased line-haul vehicles, the trucker's report to the I. C. C. showed an average gross income per vehicle of \$49,119. The average net return per vehicle was \$9,044. The trucking firm had an operating ratio of 81.7, which means that it had an 18.3 per cent net return on gross income—with no capital charges on roadway to pay out of its net revenues. The firm's report to the I. C. C. also showed a 58.7 per cent net return on net depreciated investment, or approximately 16 times as much as the railroads.



Left—Siding has been thrown over to place the signal next to the main track. Above—Intermediates are spaced on a time-distance basis in order to necessitate fewer such signals

With C. T. C., L. & N. Uses Fewer

The Louisville & Nashville has installed centralized traffic control on 136 miles of single track between Henderson, Ky., and Amqui, Tenn., replacing a system of train operation by automatic block signals and train orders. Henderson is on the south side of the Ohio river, opposite Evansville, Ind. The L. & N. has a 165-mile main line from St. Louis to Evansville. Also at Evansville, the L. & N. connects with the Chicago & Eastern Illinois line to Chicago, 287 miles northward. Amqui, the south end of the new C.T.C., is a junction 9.7 miles north of Nashville, Tenn., from which point the L. & N. extends to Birmingham, Mobile, and New Orleans. The east-and-west line of the L. & N. between Louisville and Memphis crosses the Henderson-Amqui line at Guthrie.

The schedules for the 136 miles between Henderson and Amqui include 12 passenger trains and 8 through freights daily, and 2 local freights daily except Sunday, totaling 22 scheduled trains. Extra trains are operated as required, totaling up to a maximum of 30 trains on some days. The "Georgian" is a through passenger train between Atlanta and Chicago and St. Louis, and the "Dixie Flyer," the "Dixie Limited" and the "Dixie Flagler" are through trains to and from Florida. These trains make connections at Nashville for Birmingham, Mobile, New Orleans and other cities.

For most of the 136 miles between Henderson and Amqui the railroad traverses undulating territory, with short rolling grades. The only long grade starts at Goodlettsville and ascends at about 0.9 per cent northward for 9 miles to Greenbrier. Curvature is relatively light, the maximum being 4 deg., and there are only 14 curves

Costs reduced by removing 5 sidings, converting 11 to house tracks and installing power switches at only 22

at 4 deg. The track is well constructed with 132-lb. rail. The streamlined "Georgian" passenger train is scheduled at 2 hr. 29 min. northbound and 2 hr. 37 min. southbound for the 136 miles between Henderson and Amqui. Fast freights make this mileage in about 7 hr. 32 min.

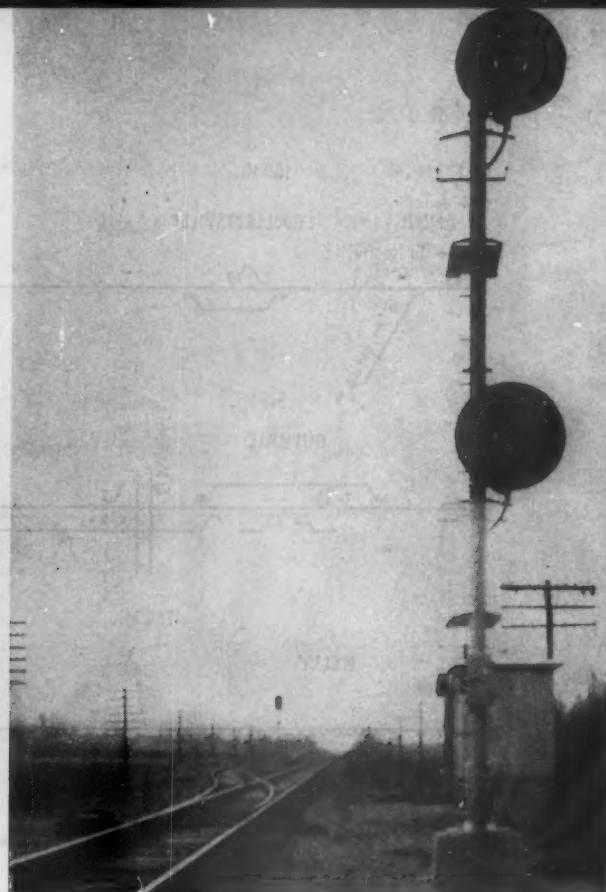
Why Centralized Traffic Control

Based on the benefits of centralized traffic control realized on several previous installations on the L. & N., a decision was made to install this form of signaling in the Henderson-Amqui territory, and to take the necessary steps to reduce the number of sidings to be equipped in proportion to the traffic, and thus minimize the materials required for this C.T.C. The important advantage of the centralized traffic control, as installed, is that train movements are authorized by the indications of signals, which, together with the power switches, are controlled by the dispatcher.

If straight automatic block signaling had been continued, very few sidings could have been removed, but



Above—Train movements are now authorized by signal indication rather than train orders. Right—Of a total of 38 sidings, only 22 are equipped with power switches and signals for C.T.C.



Sidings on Single Track

experience on other C.T.C. projects in service indicated that fewer sidings would be needed with C.T.C. than with automatic block. Of the 38 sidings previously in service on this 136 miles, only 22 were equipped with power switches and semiautomatic C.T.C. controlled signals for authorizing train movements. Five sidings were removed, and 11 were left in place for use as house tracks, or storage tracks, the hand-throw switches being equipped with electric locks. At the sidings to be equipped with switch machines, the old No. 10 turnouts were replaced with new No. 12 turnouts.

Procedure at Branch-Line Crossing

At Trident, a single-track branch line of the L. & N., the M. H. & E. branch, crosses the main track at grade. Derails on the M. H. & E. branch are pipe-connected to a hand-throw lever which is equipped with an electric lock. An approaching train on the M. H. & E. is stopped short of the derail. The conductor or a trainman goes to the lever stand and operates a button which sends an indication to the dispatcher's control machine to show that an M. H. & E. train is waiting at the crossing. If the train is to cross, the dispatcher sends out a control to release the lock, this release being effective if no train on the L. & N. main line is approaching within approach locking limits. The control sent out by the dispatcher also sets at Stop the signals on the main line approaching the crossing. With the lock released, the trainman throws the lever to remove the derails from the track, so that the train can pass over the crossing

and beyond the other derail, where it stops to wait for the trainman to restore the derails to normal.

At East Diamond, a main track switch, with spring mechanism and hand-throw stand, leads to a branch line extending to coal mines. The signaling at this switch is shown in Fig. 2. When a southbound train on the main track is to be routed to this branch, signal 101L is controlled by the dispatcher to display red-over-"S"-over-red. The train is stopped short of this signal while the head brakeman throws the switch. Then the aspect changes to red in the top arm over yellow in the bottom arm, the S being extinguished. This authorizes the train to pull in on the branch line, and then the switch is returned to normal by a trainman.

When a northbound train is approaching on the branch line, the dispatcher receives a light indication on his machine. This light indication is controlled through a track circuit 5,000 ft. in approach to signal 101RB. The dispatcher can then clear signal 101RB which authorizes the train to trail through the spring switch, without stopping, and proceed north on the main line. Local conditions are such that if a branch line train pulls up and stops just short of signal 101RB, the train will be standing on an ascending grade. Therefore, a special white light indicator was installed on the branch line 1,000 ft. in approach to signal 101RB. When signal 101RB is cleared, the indicator is lighted thus indicating to the engineer that he can proceed, prepared to pull on out onto the main track without stopping.

Normally, the white light indicator is dark. If the indicator is dark when a branch line train approaches, the

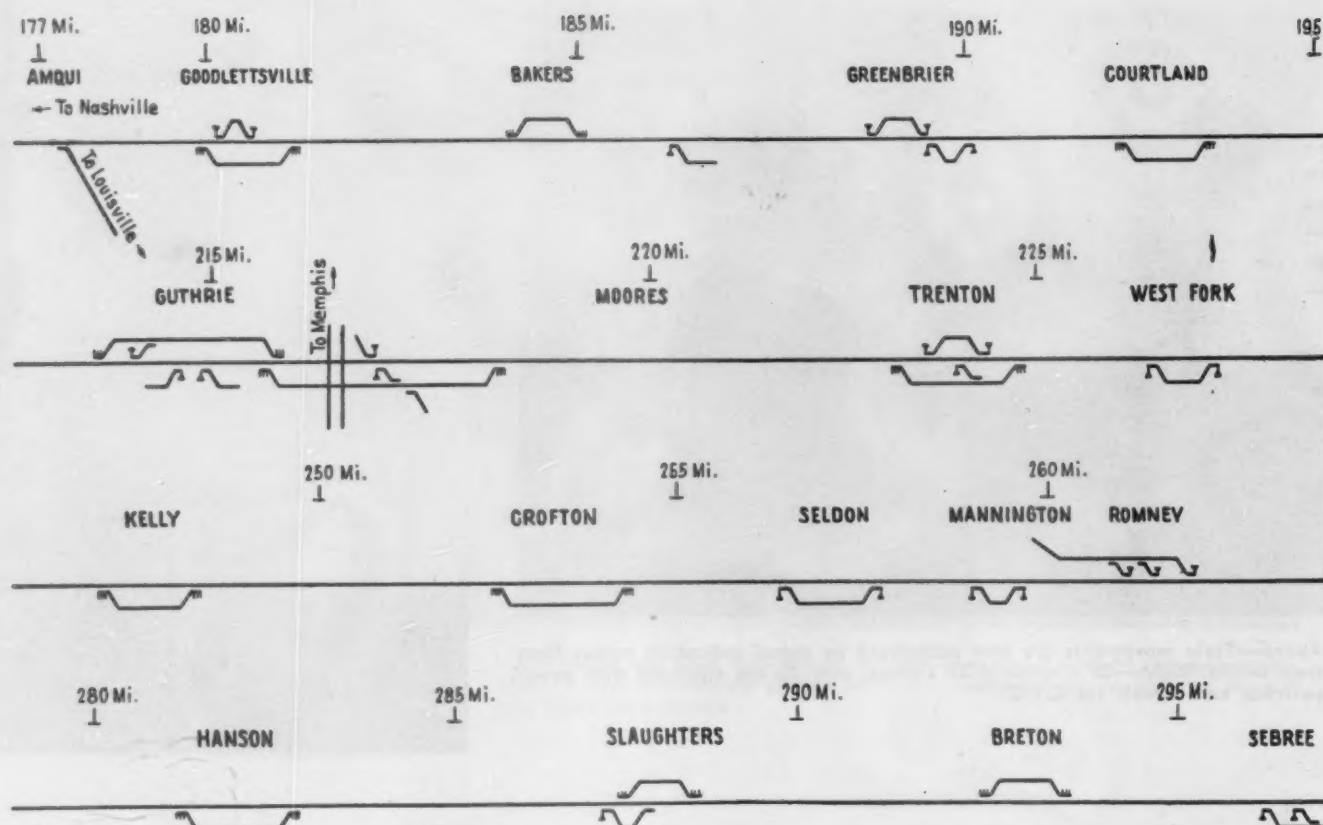


Fig. 1—Diagram of tracks and sidings in C.T.C. territory on

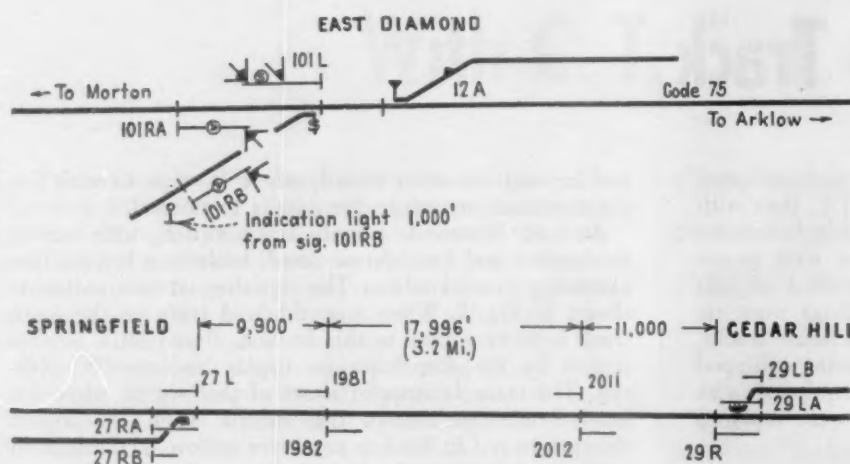


Fig. 2—Track and signal layout at East Diamond

Fig. 3—Layout of signals between Cedar Hill and Springfield

train is stopped at or near the indicator, and will wait until the indicator is lighted. By waiting until the indicator is lighted, the engineman will know that the dispatcher has cleared signal 101RB and that he can proceed out onto the main line without having to stop.

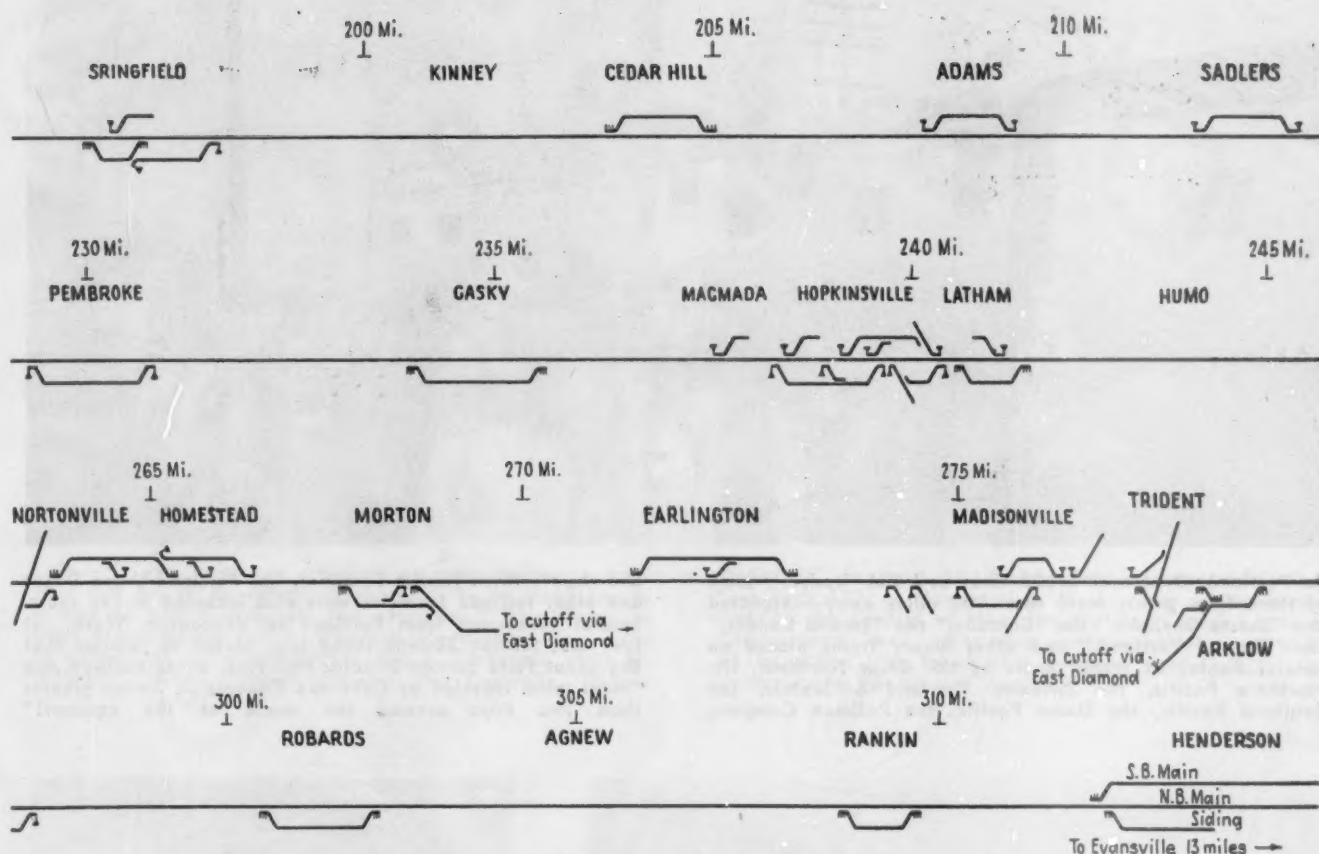
The intermediate signals are located on the basis of saving train time. The layout between the power sidings at Cedar Hill and Springfield is shown in Fig. 3. Taking ascending grade into consideration, signal 2012 is 11,000 ft. from station-entering signal 29R at Cedar Hill. Signal 1981 is 9,900 ft. from station-entering signal 27L at Springfield. These distances are made as short as practicable to help in giving trains a green signal instead of a yellow when the dispatcher changes lineups on short time.

In this layout, the intermediates are double locations and, therefore, the distance from station-leaving signal

29LA, at Cedar Hill, out to signal 2011 is as short as practicable. This is an advantage. For example, if a southbound freight train is waiting on the siding at Cedar Hill for a southbound passenger train to go by, the signal 29LB can be cleared for the freight to depart as soon as the rear of the passenger clears signal 2011. The shorter this distance is, the less the time lost in waiting.

With these locations for the two double sets of intermediates, there is a block about 3.2 miles long between the two sets of intermediates. This is not considered too long for following trains, because two trains traveling at normal maximum speeds rarely operate at such a short spacing.

At Hopkinsville, there are 11 hand-throw main-track switches leading to house tracks, industries, coal yards, etc., and the local freight train spends considerable time serving these industries each day. These hand-throw



the L. & N. between Henderson, Ky., and Amqui, Tenn., 136 miles

Power Sidings		Sidings With Electrical Locks		Sidings Removed	
MP	Town	MP	Town	MP	Town
309	Rankin	297	Sabree	305	Agnew
301	Robards	271	Madisonville	244	Humo
293	Braton	271	Okema (cut-off)	239	MacMada
288	Slaughters	261	Romney	220	Moore
282	Hanson	257	Seldon	201	Kinney
278	Arklow	239	Hopkinsville		
276	Arklow (cut-off)	230	Pembroke		
271	Earlington	227	Westfork		
269	Morton	212	Sadlers		
265	Nortonville	208	Adams		
253	Crofton	189	Greenbrier		
248	Kelly				
241	Latham				
235	Casky				
223	Trenton				
216	Guthrie north				
214	Guthrie south				
204	Cedar Hill				
197	Springfield				
193	Courtland				
185	Bakers				
180	Goodlettsville				

switches are south of the power siding which is just north of Hopkinsville. In order to permit the switch engine to occupy the main track at Hopkinsville, and at the same time advance a northbound train from Casky, a special double location of C.T.C.-controlled signals was installed south of the most southerly hand-throw switch at Hopkinsville. This establishes a switching zone, 4,700 ft. long, between these hold-out signals and the signals at the south end of the siding.

This C.T.C. was planned and constructed under the jurisdiction of W. H. Stilwell, signal engineer, the construction forces being under the leadership of H. L. Petty, general signal construction foreman. The major items of signal equipment were furnished by the General Railway Signal Company.

SOME NEW SLANTS

(Continued from page 46)

York zone, the restraint on the guiding trucks is released by a speed-controlled device at speeds below 30 m.p.h.

In response to questions, Mr. Gowans said the improvements result from better ventilation, better insulation and better design. He said the reduced voltage made it somewhat easier to stay within space limitations, but added that nearly all the improvements could be incorporated into a 3,000-volt locomotive today.

The first application of regenerative braking in the western hemisphere on a railroad using rectifier substations was described in a paper by A. Schmidt, Jr. The application is in the substations of the Central Railway of Brazil. Reverse flow of traction current through the substation is accomplished by using one rectifier as an inverter.

Voltage control on the rectifiers is obtained by using anode grids to delay the start of the anode conduction. Further retardation of the firing time until the voltage is negative is used to reverse the voltage of the unit which acts as an inverter.

In response to questions, Mr. Schmidt said it would be possible to use one of the rectifiers as an inverter, but this would require switching to take it off the line and reconnect it. It would then not be instantly available when inversion was required.

Questioned about relative costs of mercury-arc inverters and rotating machinery for the same purpose, Mr. Schmidt said the maintenance cost of the rotary machine would be higher. When asked about arc-backs, he said the arc-back rate is not increased. The rectifiers, he said, are not affected during inversion.



At Portland, Ore., over 6,000 Cubs and Cub leaders—some of them from points more than 100 miles away—inspected the "Shasta Daylight," the "Cascade," the "Empire Builder," the "City of Portland," and other luxury trains placed on special display at stated hours by the Great Northern, the Northern Pacific, the Spokane, Portland & Seattle, the Southern Pacific, the Union Pacific, the Pullman Company

and the Northern Pacific Terminal. The Portland Union Depot and other railroad facilities were also included in the tours. Special excursions from Portland to Vancouver, Wash., at low rates for the 20-mile round trip, proved so popular that Boy Scout Field Service Director Phil Frost wrote *Railway Age* "total miles traveled by Cubs and Cubbers . . . were greater than two trips around the world at the equator!"

The Cubs Study Railroading

April was "Railroad Month" for some 830,000 Cub Scouts—the 8- to 10-year-old "kid brothers" of the Boy Scouts of America. With the cooperation of railroads in all parts of the country—and of the Military Railway Service in Japan as well—thousands of boys, parents and leaders had a chance to inspect railroad facilities or to

make special railroad trips at low excursion fares. The Association of American Railroads, which is preparing an account of all activities undertaken, was called upon to supply "great volumes" of material to Cub pack and den leaders, and has received "several thousand letters of enthusiastic thanks."

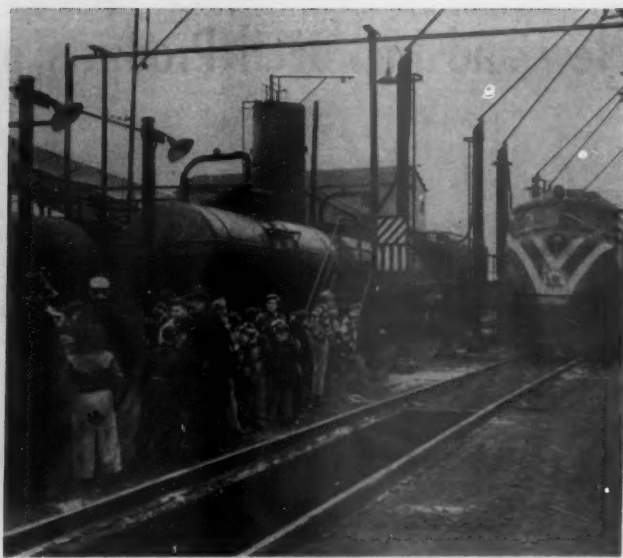


Steam locomotives are still pretty interesting to "small fry"—and parents, too, judging from this picture of New Jersey Cubs at the Jersey Central's Communipaw engine terminal.

The C.N.J. also showed its own movie, "The BIG Little Railroad," at 21 Cub meetings with a total attendance of 2,500



Left—"If you have any children or grandchildren I hope they will get to do something that will be as much fun as it was us (sic) Cub Scouts this afternoon." That's part of what nine-year-old Robert Whatley, of Atlanta, Ga., wrote to Central of Georgia President Ben J. Tarbutton after his (Robert's!) first railroad trip—on the Central's "Nancy



Hanks II" on April 28. Right—Cold weather didn't keep Cub Pack 123, of New Market, N. J., from getting a good look at the Central of New Jersey's diesel service rack at Communipaw, N. J., when they participated in one of about 45 inspection trips which that company conducted for Cub Scouts during March and April



Left—Jerry Leighton, Harry Campbell and Paul LeFarge, of Oregon City (Ore.) Cub Pack 524, sample the thrills of Astra Dome travel. Right—Railroads in all parts of the coun-



try participated in Cub Scout month; this group of boys is getting ready to board the Central of Georgia's "Nancy Hanks II"

In Japan, Too!

A. P. O. 503, SAN FRANCISCO

TO THE EDITOR:

Noting on page 50 of the April 16 issue an article concerning the Cub Scouts' study of railroads as their project for April, it might be of interest to note that this organization, which supervises military rail traffic over the Japanese National Railways, made a small contribution to this worthy project.

A display of a typical Allied train with a Pacific-type steam locomotive, one coach, three sleepers, one diner and

a troop kitchen car, was arranged at Higashi Station, Yokohama, and visited by some 70 Cub Scouts, their mothers, and 10 leaders here on Saturday, April 28. The visitors were served refreshments in the troop kitchen car. This permitted American boys, sons of military personnel here away from home, to participate directly in this national project fostering the inherent interest of boys in railroading.

Lt. Col. Jean M. Gray, Transportation Corps, chief of operations, who arranged the display, is from the Norfolk & Western. I am from the New York Central.

HARRY E. OWENS,
Colonel, Transportation Corps,
Commanding, 8010th Army Unit,
Military Railway Transportation Service

New and Improved Products of the Manufacturers



Underwood Machine Features Automatic Proof

The Model "E" Underwood Sundstrand accounting machine, which provides two crossfooters with direct subtraction, was recently introduced by the Underwood Corporation, New York 16. This 10-key keyboard machine is designed for operation by the touch system. Its interchangeable control plates, the manufacturer states, make possible automatic operations, minimize errors and give positive accuracy.

Other features of this machine, as described by its maker are: automatic column selection; front-feed carriage with writing line and all other entries visible at all times; automatic computation and printing of debit or credit balances; automatic proof total, and, when necessary, automatic adjustment of proof total; and automatic line proof on every posting.

The Model "E" is manufactured in two carriage widths, 18 in. and 24 in., and with listing and totaling capacities up to 99,999,999.99.



Buda Tractor with Gasoline or Diesel Engine

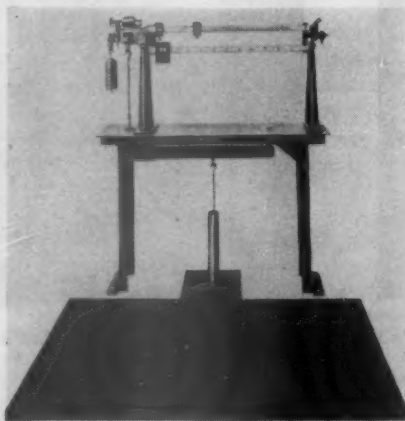
The model HA-120 Shop Mule tractor just announced by the Buda Company, Harvey, Ill., is available either with a Buda gasoline engine or with a diesel engine made by the same company. Four forward and one reverse speed have been provided. While draw-

bar pull is standard at 12,000 lb., the addition of wheel weights will increase this to 13,000 lb. Standard weight of the new Shop Mule is 15,980 lb., while its outside turning radius is 164 in. Maximum speed is 10 $\frac{3}{4}$ m.p.h. and in reverse 1.5 m.p.h.

"Fiberstrap"

A new fiber strapping material, said to be capable of withstanding a pull of 275 lb., has just been put on the market by A. J. Gerrard & Co., Melrose Park, Ill. "Fiberstrap" is available in standard $\frac{3}{4}$ in. width, .040 in. thick, in 25 lb. coils carrying 1,750 ft. of strap.

The manufacturer states that the new strapping material, which can be applied with a standard Steelbinder strapping tool, is practical for general binding operations where light weight steel strapping normally is used, including recoopering work on rail shipments.



Platform Beam Scale

Called the Load King, a platform beam scale has been designed primarily for heavy-duty industrial applications where shock-loading is the rule. The lever system in the platform is all-steel as are other key parts. No wood is used.

Poises on the main bar are mounted on roller bearings for rapid positioning. Other features of the scale, developed by the Yale & Towne Manufacturing Co., Philadelphia 15, Pa., include a 100 per cent end loading platform that gives the same reading regardless of the location of the load on the platform. The platform which is mounted on outboard bearings, also absorbs the

shock of moving loads without damage to the scale. It will not tip.

Pit depth required is 11 in. Available in self-contained and semi-self-contained models, the scale is built in capacities up to 6,400 lb. Platforms for the unit range from 46 in. by 38 in. to 76 by 54 in.



15,000-Lb. Capacity Fork Truck Added to Clark Outdoor Line

The "Yardlift-150," specially designed for outdoor handling of loads up to 15,000 lb. was recently announced by the Industrial Truck Division of Clark Equipment Company, Battle Creek, Mich. A 22-in. diameter hand wheel which operates an hydraulic power steering control is said to make this unit easy to control. An extra-wide axle has been provided so that the "Yardlift-150" will have maximum stability under load.



This calculator, just put on the market by Underwood Corporation, New York 16, features automatic printing of multiplication, division, subtraction and addition, also automatic credit balance



Lipp rust-proof journal sleeve before application (left); The sleeve is pressed firmly over the journal and dust-guard seat



(center); Taping the sleeve holds it securely in place (right). A slight tug will remove the sleeve



Lipp Rust-Proof Journal Sleeve

A rust-proof journal sleeve, recently developed by the J. J. Lipp Paper Company, Chicago, consists of a heavy, creped, waterproof and reinforced material, laminated on one side with VPI (vapor phase inhibitor) and fabricated in sleeves to fit over and protect machined axle journals. The action of the VPI chemical rust inhibitor is described as formation of a vapor, the molecules of which adhere to metal surfaces within the container, chemically attack oxygen and hydrogen in the confined space, and make these gases inert as far as corrosion is concerned.

VPI is patented by the Shell Development Company, and paper impregnated with this material is made under license by the Angier Corporation for general industrial packaging. Thorough tests indicate that this new rust preventative may revolutionize ordnance packaging. It is already being widely and successfully used on

highly finished diesel engine parts during shipment to railroads where these parts are said to arrive in excellent condition and ready for immediate use without cleaning.

The Lipp rust-proof journal shield also is said to have shown favorable results in tests by the Griffin Wheel Company, by a leading car builder and about 20 railroads to date. The sleeve is received as a heavy flat envelope with the VPI impregnated paper on the inside.

In applying the sleeve, the closed end is pushed in, forming a round tube. It is then placed over the journal and dust guard seat and held there with the knee while a strip of Lipp's waterproof pressure-sensitive tape is applied, half on the axle shoulder and half on the sleeve, and wrapped completely around the axle. This holds the sleeve on the axle and keeps water out. The ends are then folded back and taped down to form a neat tubular cover. In removing, a slight tug on the tape is all that is required.

In practice, newly turned journals will be protected at the lathe, and moved into storage with the sleeves attached. When the wheel assembly is ready for installation in a truck, it is rolled to the truck and the sleeves are removed, requiring only a few seconds. These sleeves are then placed on the bad-order journals to furnish protection until the wheel and axle assemblies are returned to the wheel shop.

On the basis of test observations of VPI material it is expected that the Lipp shield will protect journals in outdoor storage up to two years. In addition to other advantages, use of the sleeve is expected to avoid the need for periodically repainting the journals of stored axles and wheel assemblies. The sleeve is presently being made in three sizes, 5 in. by 9 in., 5½ in. by 10 in. and 6 in. by 11 in. If desired it can be supplied in extra lengths to extend over and protect finished wheel seats as well as the journals.

Heavy-Duty Clamping Device

A clamp for handling heavy, bulky loads without use of pallets, is announced by the Industrial Truck Division, Clark Equipment Company, Battle Creek, Mich., for use on Clark Utilitrac models (both gas and electric powered, with capacities up to 7,000 lb., and on the Clark Yardlift-60, gas-powered pneumatic-tired 6,000-lb. model).

The clamp is hydraulically actuated. The slide arms and guides are made from rolled channel sections of alloy steel. Separate double-acting hydraulic cylinders with piston rods actuate each clamp arm for extension and clamping. An auxiliary valve controls the clamp, and a check valve is incorporated in the



hydraulic system as standard equipment to prevent loss of clamping pressure.

The clamp arms can be extended from a minimum opening of 24 in. to a maximum of 95 in. Overall width of the clamp assembly with arms closed is 67 in.

The extra heavy duty clamp is not detachable; it is mounted on the lift brackets of the truck and cannot be used interchangeably with standard forks. Clamp arms, however, are bolted to the slide arms making them detachable and interchangeable with different types of arms. Forks which can be bolted to the slide arms are available.

Clamp arms for handling bales have a 1 in. toe-in at the tips. The amount of toe-in can be varied depending on the material to be handled and the type of arms used.



This is the group which supplies everyday direction of the S.W. & I.B. Seated, left to right: J. J. Wallace, assistant to manager; L. E. Ford, manager; and J. C. Anderson, assistant to manager. Standing, in the same order: H. A. Carroll, general supervisor; C. R. Haynes, chief clerk; and A. J. Reynolds, general supervisor

The Southern Weighing & Inspection Bureau . . .

How It Helps South-Eastern Roads and Shippers

Fiftieth anniversary of bureau's founding celebrated this month — Policing agency sees that tariffs and classification are adhered to

The Southern Weighing and Inspection Bureau, one of four agencies set up by the railroads to secure shipper and railroad compliance with tariff rules and regulations in practically all phases of rail transportation, is 50 years old this month. These bureaus (the others are the Eastern Weighing and Inspection Bureau, the Western Weighing and Inspection Bureau and the Trans-Continental Freight Bureau) all came into being about the turn of the century. Immediately following the passage of the Interstate Commerce Act (1887), there was chaos in the classification and weighing of freight, and numerous organizations were set up to police these functions. Shortly after 1900 through consolidations these four bureaus had been formed.

The S.W. & I.B.—as it is called most frequently—works for 84 southeastern railroads in the area south of the Potomac and Ohio rivers and east of the Mississippi. General offices of the bureau are located in Atlanta, Ga., where L. E. Ford, manager, and his two principal assistants, J. J. Wallace and J. C. Anderson, preside over the day-to-day business of the organization. Altogether, the bureau employs 160 persons. Included are the headquarters' general and clerical staff as well as local organizations, consisting of one to eight persons, at 30 points in the Southeast. Twenty-four traveling inspectors serve smaller points, and eight specialists are engaged in supervising furniture packing, fiberboard container studies, veterinary service and scales and weighing.

A 13-man executive committee, headed by J. G. Kerr, chairman of the Southern Freight Association, supervises the S.W. & I.B. A subcommittee of this group, also headed by Mr. Kerr, is appointed to deal with important administrative and managerial problems between meetings of the executive committee.

Among the more important functions of the bureau, which number about 18, are supervision of transit privileges and weight agreements; classification of articles; and freight loss and damage prevention. The S.W. & I.B. is presently policing transit arrangements with more than

2,000 southern shippers. In the year 1950, 1,740,000 cars of freight were handled from points in Southern territory under the provisions of weight agreements with 3,830 firms. These weight agreements are of mutual benefit to carriers and shippers alike in that they reduce operating costs, minimize damage due to extra handling, and eliminate delay and congestion incident to weighing cars.

One of the outstanding accomplishments of the Southern Weighing and Inspection Bureau during the past few years has been in connection with its campaign to secure shippers' compliance with the revised furniture packing specifications adopted in 1948. During 1950, its furniture packing supervisors made 754 visits to manufacturing plants for the purpose of correcting faulty packing and loading of furniture, and in addition handled, with shippers, damage reports covering more than 20,000 articles in an effort to correct the difficulties.

Last year, inspectors of the bureau, in Florida alone, test weighed approximately 85,000 packages of fresh fruits and vegetables to determine average billing weights on new containers and to verify published tariff weights. Thousands of packages of other commodities were test weighed elsewhere in the territory to establish agreed average weight schedules. In 1950, the bureau investigated and made recommendations in connection with more than 48,000 claims and 4,641 other files involving weights, classification, transit, and loss and damage.

Other activities of the organization include supervision of carload weighing, inspection of freight on railroad platforms for misdescription and underbilling, marking and packing, testing of fiberboard boxes, reclamation of grain doors, and registration of freight stored at ports. The bureau is almost continuously engaged, too, in conducting special investigations, in cooperation with the Southern Freight Association, Association of American Railroads, and the individual railroads, assembling statistics for use in consideration of general rate matters and in defense of complaints filed with the Interstate Commerce Commission and state regulatory bodies.

GENERAL NEWS

Freight Roller-Bearing Development Pushed

Railway Age has learned that the Mechanical Division of the Association of American Railroads is taking steps necessary to speed up development of roller bearings suitable for application to freight-car journals. The objective is to set up designs and standards for freight-car roller-bearing applications which will meet all interchange requirements. It is understood that a study will be made of the experience of railroads with passenger cars equipped with roller bearings as well as the experience of railroads which already have roller-bearing installations on freight cars.

The question of per diem adjustments to compensate car owners for the additional cost of building freight cars equipped with roller bearings is to be brought to the attention of the Operating-Transportation Division of the A.A.R.

Present research activities to improve performance of plain journal bearings are to be continued and such improvements in journal boxes as will be applicable to existing cars which may be expected to complete their service life with plain-type bearings will continue to receive consideration.

Short Course Planned on Fruit and Vegetable Loss

Designed for railroad personnel, growers, shippers, receivers and processors of fruits and vegetables is a short course on prevention of loss of these commodities during marketing scheduled to begin August 2 at the University of Minnesota. The course, a new one for the university, will be held on the St. Paul campus. Topics for discussion include losses in fruits and vegetables; winter shipping; potato handling; canned goods loss prevention; fruit and vegetable diseases; etc. There will also be a laboratory discussion with specimens of damage and disease common to Northwest shipments. Details of the course may be obtained from the Office of Agricultural Short Courses, University Farm, St. Paul 1, Minn.

R.E.A. Asks More Interim Rate Relief

The Railway Express Agency has applied to the Interstate Commerce Commission for authority to raise its "interim-relief" rate increase by one cent—from 20 cents to 21 cents per shipment on l.c.l. express traffic. The 20-cent increase was authorized by the commission last April in a report

on the interim-relief phase of the Ex Parte 177 case.

That proceeding involves R.E.A.'s pending petition for authority to make a general increase on a permanent basis. The interim increase applies to l.c.l. shipments generally, the only exceptions being daily newspapers, milk, cream and related products, and corpses. (Railway Age, January 22, page 35, and April 23, page 37.)

In asking for authority to make the surcharge 21 cents, R.E.A. called the commission's attention to wage increases recently awarded to its employees on the basis of so-called "escalator" clauses. It put the annual-basis cost of these wage increases and resultant payroll taxes at \$913,480, and the prospective annual yield from the proposed increase in the surcharge at \$785,760. The annual-basis yield of the present 20-cent surcharge is about \$15,715,000, the petition also said.

Canadian Rate Increase to Be "Re-examined" in Fall

Following its recent approval of a general 12 per cent increase in railroad freight rates (Railway Age, July 9, page 69), the Canadian Board of Transport Commissioners has announced that future increases—and possibly the one just granted, also—may be adjusted to "swing more of the load" from Western and Maritime provinces to those in central Canada.

The board has told Canadian railroads that it plans to re-examine its recent decision next fall to deal with the questions of: (1) "Easing the impact" of higher rates on movements of primary commodities and long-haul traffic, which form a large proportion of railroad freight in outlying provinces; and (2) shifting a larger proportion of total freight charges to low-rated "competitive" traffic, which is most heavily concentrated in the central provinces of Ontario and Quebec.

Both proposals are in general accord with recommendations of the Royal Commission on Transportation, whose report was reviewed in Railway Age, March 26, page 42, although that commission strongly favored maintenance by the railroads of low competitive rates. Both proposals are also in accord with the views of the eight provincial governments—all except Ontario and Quebec—which have consistently opposed higher railroad rates. They would, likewise, be a step in the general direction of Dominion-wide rate equalization which the provinces are demanding and which is called for by legislation now under consideration in Parliament (Railway Age, June 25, page 88).

Both proposals will be investigated at hearings scheduled to begin next November 12, at which time the Transport Board will deal on a more permanent basis with the railroads' still-pending application for a 20 per cent rate increase to meet higher wage and material costs and a shorter working

CAR SURPLUSES, SHORTAGES

Average daily freight car surpluses and shortages for the week ended July 7 were announced by the Association of American Railroads on July 12 as follows:

	Surplus	Shortage
Plain Box	17,938	1,596
Auto Box	8	58
Total Box	17,946	1,654
Gondola	240	2,703
Hopper	17,926	617
Covered Hopper	0	41
Stock	1,514	0
Flat	33	1,050
Refrigerator	1,649	0
Other	218	0
Total	39,526	6,065

week. The recent 12 per cent increase, estimated to yield \$54 million a year, was granted under that application, but on an interim basis.

Meantime, Canadian railways are planning an early increase in their special "transcontinental" freight rates between eastern Canada and the West Coast. These rates were not included in the 12 per cent increase, but the carriers intend to use a different procedure to raise them by the same amount. Present intentions are to put the transcontinental rate increases into effect in about a month's time.

Other increases authorized specifically by the board will probably become effective July 26.

The transcontinental rates are special subnormal charges that have been in effect between eastern Canada and the British Columbia coast for many years, to meet competition of ship traffic passing through the Panama Canal.

A. & St.A.B. Gets No Relief From I.C.C. Signaling Order

Division 3 of the Interstate Commerce Commission has denied a petition filed by the Atlanta & St. Andrews Bay for relief from the commission's June 17, 1947, signaling order. That order requires railroads to install automatic-block or manual-block signals meeting commission specifications on lines over which any passenger train is operated at a speed of 60 or more m.p.h. or any freight train is operated at a speed of 50 or more m.p.h.; and train-control or cab-signal systems on lines over which any train is operated at a speed of 80 or more m.p.h.

The A. & St.A.B. petition sought modification of the order to permit that road to operate its passenger and freight trains in excess of 59 and 49 m.p.h., respectively, under a train-order system and without automatic or manual-block signals. The commission's denial was announced in a



"FOR EXCEPTIONAL SERVICE TO SAFETY," *Railway Age* has been awarded this certificate by the National Safety Council (*Railway Age*, April 30,

page 44). This 1950 award was the third consecutive recognition by the N.S.C. of this paper's interest in public and employee safety on the rails

June 12 report by Commissioner Patterson—the 23rd report on further hearing in the general proceeding (No. 29543) out of which the June 17, 1947, order came.

The petitioner "failed to show any necessity for the modification," the report said. It added that the A. & St.A.B. had conceded that the relief was sought "only for the purpose of making up delayed time," and that it was not required for maintenance of train schedules under "normal conditions."

Florida Perishable Shippers Criticize Railroads

Refrigerator car shortages during the Florida fruit and vegetable season just coming to a close were reflected in the attitude of shippers at the 28th annual meeting of the Growers & Shippers League of Florida, held in Orlando last month. The meeting issued a resolution demanding more such cars for next season and another recommending to members the support and encouragement of the independent trucking industry as an aid to Florida's agricultural interests.

C. W. Taylor, director of the Bureau of Service of the Interstate Commerce Commission, informed the shippers that the number of refrigerator cars owned by Fruit Growers Express was totally inadequate and that it was unreasonable and uneconomic to rely on other sources to supply the large number of such cars required each season to handle Florida fruits and vegetables.

"The freezer supply for Florida is a constant headache," Taylor declared, adding that Florida shippers should stage a campaign to get the railways to provide a sufficient supply of such cars—at least enough to take care of business originating on their own lines.

"You can't," he said, "blame the private corporations owning refrigerator cars and operating them for profit too much. They've heard all the talk of the railways pricing themselves out of business by higher and higher rates on perishables and they've naturally become discouraged. On the other hand, there is no doubt but that the business is here for the cars and it should be put up to the railroads that it is their obligation to furnish the cars, but at the same time the car owners should have some assurance that they will get some business after they build the cars."

R. E. Steele, manager and general counsel for a new organization, the National Independent Transport Association, stated that his organization had been formed to promote the interests of the so-called "exempt agricultural carriers" in the trucking field and declared that the non-certificated trucker is vital to Florida agriculture. He supported his claim by figures showing the rapid increase of tonnage handled by such carriers out of Florida during the past few seasons.

A resolution was adopted demanding that the I.C.C. relieve the situation for Florida growers by reestablishing the refrigerator car pool that prevailed during World War II.

Gordon Stedham, of Orlando, secretary-manager of the Growers & Shippers League, which represents most of the growers and shippers of fruits and vegetables in Florida from a traffic standpoint, stated that the organization has been particularly active in the past year in fighting attempts at rate increases. He stated that lower rates result in more tonnage and more revenue for the railroads and cited the example of a rate to Pittsburgh, Pa., that had brought largely increased tonnage of perishables back to the rails.

R. D. Keene, of Orlando, was re-elected president of the league, with Mr. Stedham continuing as secretary-manager.

Report on Accident At Bryn Mawr, Pa.

Reporting on its investigation of the May 18 collision between two Pennsylvania passenger trains near Bryn Mawr, Pa., the Interstate Commerce Commission has recommended that that road extend to the line involved the automatic train-control system which it is installing on other lines. As to the cause of the accident, the report made the expected finding that it resulted from "failure to operate the following train in accordance with signal indications."

The "following train" was the P.R.R.'s No. 68, the "Red Arrow," which was eastbound from Detroit to New York. It ran into the rear end of No. 36, the "Philadelphia Night Express," eastbound from Pittsburgh to Philadelphia, which had stopped in response to signals activated by a dragging-equipment detector. The accident resulted in the death of seven passengers and a Pullman porter, and the injury of 95 passengers, 14 Pullman employees, eight dining car employees, and six train-service employees. (*Railway Age*, May 28, page 50.)

The commission's report came from its Division 3, and it was written by the division's chairman—Commissioner Patterson. It was based on a formal investigation which was docketed as Ex Parte No. 181.

The trains were on one of two east-bound tracks of the P.R.R.'s four-track line in the vicinity of Bryn Mawr. The line is part of the Philadelphia Terminal division, and trains running over it are operated by automatic-block and cab signals. The way-side signals involved were automatic signals 132 and 118 and semi-automatic signal 10R. They are of the position-light type, and are located, respectively, 2.66 mi. west and 1.21 mi. west, and 1,554 ft. east of the point of collision.

It was in response to signal 10R's "stop" indication that Train No. 36 had stopped. Thus it was standing within the block of signal 118 with its rear end 1.21 mi. east of that signal. It was being inspected for dragging equipment by its engineer, fireman and conductor, the flagman, meanwhile, having gone back to protect the rear.

In such a situation, the normal indications of signals 132 and 118 for a following train are "Approach" and "Stop-and-Proceed," respectively. The latter would call for a "restricted" speed throughout the block of signal 118; and "restricted speed" is defined in P.R.R. operating rules as "not exceeding 15 m.p.h., prepared to stop short of train, obstruction. . . ." Meanwhile, the normal indication of the following train's cab signals would be "restricting" when that train entered or was proceeding through the block occupied by the preceding train.

Evidence gathered in the investigation, including results of various tests, led the commission to conclude that the "roadway and cab signals functioned as intended" for both trains. In other words, the commission concluded that No. 68's engineer had signals fixing for him a "restricted speed" (limit 15 m.p.h.) after he passed signal 118.

When this train ran into No. 36's rear end, it was "moving at an estimated speed of 40 m.p.h.," the commission's report also said. It noted, too, that the weather was "clear" and it was "daylight" at the time of the accident which occurred at 6:39 a.m.

The fireman and engineer of No. 68 both offered testimony which agreed with the commission's finding that signal 118 indicated "Stop-and-Proceed" for their train. That indication was obeyed. As to subsequent cab-signal indications, however, the enginemen offered conflicting testimony; but all indications they reported seeing would have been more favorable than the "restricting" indication which the commission found to have remained unchanged after the train passed signal 118.

The train-control system called for by the commission's recommendation would be one like the P.R.R. is now installing on its New York division—which system, as the commission put it, "automatically and continuously will enforce a speed restriction of not exceeding 20 m.p.h. while proceeding through a block occupied by a preceding or opposing train." If No. 68's locomotive had been so equipped, the "evidence of record shows that the train would have been stopped before the collision occurred," the report also said.

In this connection, it was the testimony of No. 36's flagman that No. 68's brakes were not applied until that train was about 400 ft. west of the point of collision.

Waybill Studies

Additional waybill studies have been issued by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. They are: Statement No. 5123, Distribution of Petroleum Products by Petroleum Administration Districts—Terminations in Fourth Quarter of 1950; Statement No. 5126, Distribution of Freight Traffic and Revenue Averages by Commodity

Classes—Terminations in 1950; Statement No. 5128, Quarterly Comparisons of Traffic and Revenue by Commodity Classes—Terminations in Fourth Quarters of 1950, 1949, 1948 and 1947; and Statement No. 5129, Territorial Distribution of Traffic and Revenue by Commodity Groups—Terminations in Fourth Quarter of 1950.

April Accident Statistics

The Interstate Commerce Commission has made public its Bureau of Transport Economics and Statistics' preliminary summary of steam railway accidents for April and the first four months this year. The compilation, which is subject to revision, follows:

Item	Month of April 1951	April 1950	4 months ended with April 1951	4 months ended with April 1950
Number of train accidents*	801	713	3,786	2,790
Number of accidents resulting in casualties	24	43	197	151
Number of casualties in train, train-service and non-train accidents:				
Trespassers:				
Killed	88	76	270	273
Injured	111	115	277	304
Passengers on trains				
(a) In train accidents*				
Killed	12	199	85	30
Injured	12	199	776	488
(b) In train-service accidents				
Killed	3	3	5	6
Injured	153	140	531	631
Travelers not on trains:				
Killed .....	..	..	1	3
Injured	48	80	249	272
Employees on duty:				
Killed	27	17	132	96
Injured	1,683	1,505	7,852	6,304
All other non-trespassers**				
Killed	134	135	594	550
Injured	457	469	2,233	2,003
Total—All classes of persons:				
Killed	252	231	1,087	938
Injured	2,464	2,508	11,918	10,002

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former caused damage of \$275 or more to railway property in 1950. Beginning January 1, 1951, this minimum was raised to \$300. Only a minor part of the total accidents result in casualties to persons, as noted above.

** Casualties to "Other non-trespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and non-trespassers, were as follows:

Persons:				
Killed	130	122	561	514
Injured	315	349	1,577	1,460

Railroads Get More Amortization Certificates

Certificates of necessity authorizing accelerated amortization of facilities for tax purposes have been awarded recently to five railroads, according to the Defense Production Administration. D.P.A. issues the certificates upon recommendation of the Defense Transport Administration.

Railroads receiving certificates, together with amounts to be involved in the accelerated amortizations, are listed below. The percentage figures show proportions which the amortized amounts are of the total cost of the facilities involved.

Atchison, Topeka & Santa Fe, \$25,-275,000, 80 per cent.

"Man Bites Dog" Dep't.

Sequel—The Dog Dies!

Governor Stevenson of Illinois, on June 25, signed Illinois house bills 267 and 277, repealing the state's two-cent-a-mile maximum on intrastate passenger fares. The state's commerce commission, though bound to the provisions of the law (enacted in 1907), had openly opposed it as "archaic" and "a discrimination long needing removal" (*Railway Age*, June 4, page 64). Both the bills which brought on repeal of the law were approved by the commission. H.B. 267 actually effected the repeal but the second bill was necessary to delete certain references to the old law from the state's public utilities act. The repeal became effective on July 1, 1951, and has opened the way for Chicago's many suburban carriers to seek increases in local fares commensurate with present interstate rates.

The commission's attitude was not entirely disinterested. The railroads have been taking Illinois fare cases to the Interstate Commerce Commission, on the ground that the two-cent law constituted a burden on interstate commerce. With the old law repealed, the Illinois body hopes to keep jurisdiction.

Chicago & Eastern Illinois, \$496,450, 65 per cent.

Chicago Heights Terminal Transfer, \$1,000,000, 80 per cent.

New York, New Haven & Hartford, \$5,656,300, 65 per cent, and \$1,341,738, 80 per cent.

Southern Pacific, \$21,551,539, 65 per cent.

Railroad Men Receive Honorary Degrees

Honorary degrees, as listed, have been awarded by the indicated colleges to the following railroad and railroad supply company officers:

Martin W. Clement, chairman of the board of the Pennsylvania—Doctor of Humane Letters, by Trinity College, Hartford, Conn., June 17.

Benjamin F. Fairless, president of the United States Steel Corporation—Doctor of Laws, by Trinity College, June 17; Doctor of Laws, by St. Lawrence University, Canton, N. Y., June 10.

Harry C. Murphy, president of the Chicago, Burlington & Quincy system—Doctor of Engineering, by Iowa State College, Ames, Iowa, June 15.

R. S. Marshall, senior vice-president, retired, of the Chesapeake & Ohio—Doctor of Laws, by Defiance College, Defiance, Ohio, June 6.

Norris R. Crump, vice-president of the Canadian Pacific—Doctor of Engineering, by Purdue University, Lafayette, Ind., June 10.

Wilson McCarthy, president of the Denver & Rio Grande Western—Doc-

tor of Law, by the University of Utah, Salt Lake City, June 10.

Wayne A. Johnston, president of the Illinois Central — Doctor of Law, by Middlebury College, Middlebury, Vt., June 18.

W. A. Mather, president of the Canadian Pacific—Doctor of Civil Law, by Bishop's University, Lennoxville, Que., June 21.

John Morris Gets Diesel Award

In recognition of his leadership in diesel locomotive development, J. P. Morris, general manager—mechanical, of the Santa Fe, was awarded a bronze plaque at the regular June meeting of the St. Louis Railroad Diesel Club.

In his address, which was the occasion of the presentation, Mr. Morris reviewed early difficulties and experiences with diesel locomotives; described the important part the new power has played in rail transportation; and emphasized the need for adequate servicing and repair facilities as well as for organizations trained to secure maximum utilization. Illustrative of stepped-up maintenance requirements, he said that 210 diesel units in addition to 11 assigned units and 35 switchers are now being given running repairs at Argentine, Kan., where a \$3½-million modern heavy repair and maintenance diesel shop is scheduled for completion in 1953 with capacity for handling the 600 units which will be required when that territory is completely dieselized.

1950 Crossing Accidents

Accidents at railroad-highway grade crossings during 1950 resulted in the deaths of 1,576 persons and injuries to 4,368, according to the latest compilation, statement No. 5124, of the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. In 1949, 1,507 persons were killed and 3,774 injured.

Last year's crossing accident totaled 4,000, an increase of 13.5 per cent above the 1949 total. The increases in fatalities and injuries, noted above, were rises of 4.6 per cent and 15.7 per cent, respectively.

The 1950 fatalities accounted for 48.39 per cent of the total number of persons killed last year in all railroad accidents resulting from train operation. The comparable figure for 1949 was 47.64 per cent. As for 1950's non-fatal injuries in accidents resulting from train operation, crossing accidents accounted for 20.07 per cent of the total, as compared with 19.25 per cent in 1949.

Other figures in the compilation showed that 3,662 of the 1950 crossing accidents involved automobiles, buses or trucks. The frequency rates for these accidents were 4.19 per million train-miles of Class I roads, excluding switching and terminal companies, and

75.4 per million motor vehicle registrations. Comparable figures for 1949 were 3.61 and 71.9.

Motor vehicles ran into the sides of trains in 32.58 per cent of the 1950 crossing accidents involving motor vehicles. Sixty-nine per cent of these accidents occurred after dark, while 62 per cent of the accidents in which a motor vehicle was struck by a train occurred in daylight.

As has been the case for several years, December was the 1950 month in which the greatest number of crossing accidents occurred. Saturday remains the day on which most occur. In 1950, Saturday and Sunday accidents accounted for 30 per cent of the year's total.

The weather was reported "clear" when 67 per cent of the 1950 accidents occurred. Speeds of motor vehicles were reported at 10 to 19 m.p.h. in about 21 per cent of the accidents, and 20 to 29 m.p.h. in another 20 per cent. Speeds were not shown in 17.18 per cent of the accident reports, while 2.16 per cent showed speeds of 60 m.p.h. or more.

Study of "Discrimination" Against Boston Suggested

President Truman recently received from his Council of Economic Advisers a report on "The New England Economy," which has a recommendation suggesting that the Interstate Commerce Commission "continue to study the problem of the discrimination in railroad transportation rates to which the Boston port is subjected." The report had only one other "transportation" recommendation.

"There should," it said, "be a re-examination of New England's transportation facilities particularly with respect to Canadian sources."

Meanwhile, the report's discussion of "The New England Transportation System" included a conclusion holding that "rate disadvantages of New England are not nearly so important as many businessmen in New England believe."

The report, and studies on which it was based, were made by the council's Committee on the New England Economy. The committee's chairman was Charles I. Gragg of the Harvard University Graduate School of Business Administration.

The recommendation suggesting that the I.C.C. "continue to study" the port of Boston's rate situation went on to say: "There is no reason why inland cities sending materials to Philadelphia, New York and Baltimore should have favorable rates relative to the charges for commodities shipped to Boston. The shipping companies also should consider the desirability of adjusting rates to distance from all ports to foreign ports. At present Boston does not gain from its more favorable location relative to foreign ports."

Of its other recommendation, which advised "reexamination" of New Eng-

land's transport facilities, the committee had this to say: "We suggest that it may be desirable for the New England Council and other interested groups to consider the long-run future of the natural resources in Canada and Labrador, and the desirability of improving New England's transportation access to these sources. Obviously various departments and agencies of the federal government are in a position to assist materially in the investigation of such matter as improving transportation both by water and overland. This is another problem which calls for a cooperative effort of private transportation facilities together with our industrial groups, state and local governments, and the federal government."

OVERSEAS

Pakistan.—This country's government has requested bids for supplying an unspecified number of railroad ties, according to a recent issue of Foreign Commerce Weekly. Bidding conditions and specifications are obtainable from the Embassy of Pakistan, 2315 Massachusetts ave., N.W., Washington, D.C., subject to a charge of \$1.50 a copy.

ORGANIZATIONS

A.A.R. Divisions May Go To Atlantic City in 1953

In connection with the Eighth Pan American Railway Congress, to be held in Atlantic City, N. J., during the week of June 19, 1953, as announced in *Railway Age*, July 2, plans are being considered for the Mechanical and the Purchases & Stores Divisions of the Association of American Railroads to hold their 1953 annual meetings at the same time and place accompanied by an extensive exhibit of railway equipment and supplies. The 1952 annual meetings of the two divisions are expected to be held in Chicago without exhibits.

Short Line Group Plans Annual Meeting in October

James K. Knudson, defense transport administrator, Leverett Edwards, chairman of the National Mediation Board, Frank C. Squire, member of the Railroad Retirement Board, and E. H. Davidson, director of the Bureau of Locomotive Inspection, Interstate Commerce Commission, will be speakers at the 1951 annual meeting of the American Short Line Railroad Asso-

How to Smooth Out Expensive "Peaks and Valleys" of Crosstie Procurement.

**No more feasts, famines, or makeshifts
with new process that saves money and
produces better, longer-lasting ties.**

NATURE has always required that crossties be air-seasoned for periods of six months to a year or more before creosoting. This complicates tie procurement, for it compels a railroad to anticipate its tie requirements as much as two full years ahead. Yet tie installations, which usually fluctuate in agreement with rising and falling railroad revenues, cannot be accurately predicted that far in advance. This results in situations which are painfully familiar to most railroad men concerned with tie procurement: Large inventories in a year when few ties are installed in track. Then, during a continuing high rate of installations, great difficulty in getting enough seasoned ties to keep up with maintenance requirements.

One way for a railroad to avoid crosstie famine is by following a steady procurement program year in and year out. While this insures ample tie inventories, it can be an expensive policy, for interest, insurance, and decay "on the yard" all cost money. Or, more commonly, tie buying is stepped up when a railroad knows that it is going to need ties. Then, when installations drop off, the tie procurement slows down or even halts completely.

A railroad following this policy may suffer both feasts and famines — rather more, unfortunately of the latter than the former. Then, efforts to get ties may become somewhat frenzied, with much dashing about, buying a few ties here, a few there. Or the bars may be lowered; inferior woods resorted to and specifications winked at. The seasoning period may be cut short and doubtful and

costly artificial seasoning methods may be used.

Yet, as a number of railroads already know to their profit, none of these difficulties or makeshifts is necessary. A new process called Vapor-Drying* avoids these and kindred troubles by eliminating the long and expensive air-seasoning period for crossties.

With Vapor-Drying, you ship green ties directly from sawmill to treating plant, where water content is reduced and preservatives applied in a matter of hours instead of long, expensive months.

See how Vapor-Drying evens out the exaggerated peaks and valleys of crosstie procurement. Ties need only be procured a little in advance of their actual need, depending upon whether the railroad's treating plant capacity is big enough to keep pace with an average season's installations. Inventories can be cut tremendously — at least fifty per cent. You save on interest, insurance, and handling at the treating plant. Moreover, you get better, longer-lasting ties which do not check and split to the extent that air-seasoned ones do. You can use plentiful — often cheaper woods — such as gum, which makes fine ties if you eliminate its drawbacks by Vapor-Drying.

Is Vapor-Drying worth looking into? Roads that use it, such as the Southern, Norfolk & Western, Clinchfield, Charleston & Western Carolina, Piedmont & Northern, and Atlantic Coast Line will tell you it is. You'll find the complete story of Vapor-Drying interesting and valuable. Get it by writing today to Vapor-Drying Division, Taylor-Colquitt Co., Spartanburg, S. C.

This is the third in a series of discussions on the economic aspects of Vapor-Drying. Reprints of the preceding ones are available upon request.

(Advertisement)



*Process patented

ciation which will be in New Orleans, La., next October. The sessions will be held October 3 and 4 at the Roosevelt Hotel in that city.

The program was set out in a July 1 circular issued by the association's president, J. M. Hood. In addition to the addresses noted above, the "order of business" calls for reports of association officers and standing committees. On October 3 there will be a luncheon session addressed by Clayton Rand, an editor and columnist, of Gulfport, Miss. E. J. Garland, general manager of the New Orleans Public Belt, is chairman of the committee on arrangements for the meeting.

The Traffic Club of New York will hold its annual outing on July 17 at the New York Athletic Club, Travers Island, Pelham Manor, New York.

The annual mid-summer outing and dinner dance of the Traffic Club of St. Louis will be held on July 18, at Norwood Hills Country Club.

The Northwest Shippers Advisory Board will hold its next meeting in the Alex Johnson Hotel, Rapid City, S.D., on July 26. A special train will be operated by the Chicago & North Western leaving Minneapolis July 25 at 3:30 p.m. On the return

trip the train will leave Rapid City at 6 p.m., July 28, arriving Minneapolis at 11:30 a.m. the following day. Guest speaker at the luncheon session will be F. G. Fitz-Patrick, vice-president—traffic, of the C. & N. W., who will speak on "The Black Hills, Yesterday, Today and Tomorrow." The entire day of July 27 will be given over to a tour, sponsored by the Rapid City Chamber of Commerce, of the Black Hills.

The Women's Traffic Club of San Francisco will hold its next open meeting on July 19, at the Montclair Restaurant. Miss Viva Armstrong, assistant secretary and personnel manager of the California Packing Corporation, will speak on "Personnel Problems," and a movie will be shown on production and canning of pineapple in Hawaii. All past presidents will be honored at this meeting.

Forest V. Ream, of the Army Transportation Corps, was recently elected president of the Federal Transportation Association, succeeding Carl F. Berquist, also of the A.T.C. Other newly-elected officers of the association are: First vice-president, R. W. Musselwhite, General Accounting Office; second vice-president, Otto W. Bender, General Services Administration; secretary, Margaret G. Baird, Federal Supply Service; and treasurer, J. L. Sullivan, G.A.O.

The Transportation Club of Seattle, which, as reported in *Railway Age* July 2, page 75, will be host to the 28th annual convention of the Associated Traffic Clubs of America at the Olympic Hotel, Seattle, September 24-26, has announced the following convention officers: Honorary general chairman, Ben. J. Tappe, Seattle Terminals, Inc., and president of the Seattle club; general chairman, Roland M. Wolf, International Forwarding Company; vice-general chairman, L. H. Dugan, vice-president and western counsel, Chicago, Milwaukee, St. Paul & Pacific; secretary, Warren G. Smith, district freight agent, Pennsylvania; and treasurer, Kenneth H. Gill, Consolidated Freightways, Inc. Convention committee chairmen are: Registration—Robert D. Bone, general agent, freight department, Northern Pacific; hotel reservations—Stuart F. Evans, Elgin, Joliet & Eastern; banquet and meeting rooms—Star O. Yocum, James Farrell & Co.; transportation—G. Warren Averill, United Air Lines; souvenir program—Harry H. Tipple, general agent, Atchison, Topeka & Santa Fe; publicity—Hal D. Briggs, Rayonier, Inc.; speakers—Lawrence M. Curtin, general agent, Nickel Plate; reception—George E. Campbell, Intercoastal Steamship Corporation; and women's subcommittee—Mrs. Frances Cooper, Gwin, White & Prince. Cooperating with the Seattle Transportation Club in convention arrangements are the Seattle Industries. (Continued on page 67)

Selected Income and Balance-Sheet Items of Class I Steam Railways in the United States

Compiled from 127 reports (Form IBS) representing 131 steam railways
(Switching and Terminal Companies Not Included)

Income Items	United States			
	For the month of March 1951	For the month of March 1950	For the three months of 1951	For the three months of 1950
1. Net railway operating income.....	\$78,262,798	\$75,762,315	\$174,972,497	\$123,418,467
2. Other income.....	19,847,411	17,906,793	56,997,924	54,804,418
3. Total income.....	98,110,209	93,669,108	231,970,421	178,222,885
4. Miscellaneous deductions from income.....	8,759,387	4,634,112	17,391,156	10,938,319
5. Income available for fixed charges....	89,350,822	89,034,996	214,579,265	167,284,566
6. Fixed charges:				
6-01. Rent for leased roads and equipment.....	10,081,162	9,592,298	27,784,545	26,897,863
6-02. Interest deductions.....	24,809,358	24,985,647	74,354,797	74,857,966
6-03. Amortization of discount on funded debt.....	235,747	201,342	667,378	609,216
6-04. Total fixed charges.....	35,126,267	34,779,287	102,806,720	102,365,045
7. Income after fixed charges.....	54,224,555	54,255,709	111,772,545	64,919,521
8. Other deductions.....	3,038,023	3,315,608	9,118,754	9,707,938
9. Net income.....	51,186,532	50,940,101	102,653,791	55,211,583
10. Depreciation (Way and structures and Equipment).....	36,475,529	34,920,312	109,179,852	104,553,289
11. Amortization of defense projects.....	4,405,236	1,371,026	7,966,578	4,129,110
12. Federal income taxes.....	48,249,174	31,567,027	126,299,111	58,363,969
13. Dividend appropriations:				
13-01. On common stock.....	22,577,275	11,595,049	54,968,827	38,082,891
13-02. On preferred stock.....	5,550,476	4,945,685	44,672,139	23,300,574
Ratio of income to fixed charges (Item 5 ÷ 6-04).....	2.54	2.56	2.09	1.63
United States				
Balance at end of March				
1951 1950				
17. Expenditures (gross) for additions and betterments—Road.....	\$67,109,528	\$53,411,663		
18. Expenditures (gross) for additions and betterments—Equipment.....	215,136,535	159,248,809		
19. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707).....	476,786,196	472,875,833		
20. Other unadjusted debits.....	102,712,271	105,776,331		
21. Cash.....	806,197,569	826,060,965		
22. Temporary cash investments.....	952,538,725	749,361,026		
23. Special deposits.....	127,261,519	111,172,535		
24. Loans and bills receivable.....	1,652,727	1,099,703		
25. Traffic and car-service balances—Dr.....	61,152,595	58,221,835		
26. Net balance receivable from agents and conductors.....	161,484,341	123,088,424		
27. Miscellaneous accounts receivable.....	462,132,104	259,712,860		
28. Materials and supplies.....	814,151,509	725,772,491		
29. Interest and dividends receivable.....	15,498,744	15,644,732		
30. Accrued accounts receivable.....	234,202,704	161,142,588		
31. Other current assets.....	34,621,432	31,954,787		
32. Total current assets (items 21 to 31).....	3,670,893,969	3,063,231,946		
United States				
Selected Liability Items				
40. Funded debt maturing within 6 months ¹	\$145,138,130	\$122,442,058		
41. Loans and bills payable ²	4,368,500	9,710,706		
42. Traffic and car-service balances—Cr.....	93,566,910	79,636,779		
43. Audited accounts and wages payable.....	551,578,692	430,581,172		
44. Miscellaneous accounts payable.....	234,752,069	192,679,743		
45. Interest matured unpaid.....	61,415,746	62,619,130		
46. Dividends matured unpaid.....	19,063,028	15,821,389		
47. Unmatured interest accrued.....	73,813,564	73,533,125		
48. Unmatured dividends declared.....	32,986,700	26,449,924		
49. Accrued accounts payable.....	220,321,905	169,676,747		
50. Taxes accrued.....	846,602,254	560,696,613		
51. Other current liabilities.....	97,434,516	120,275,688		
52. Total current liabilities (items 41 to 51).....	2,235,903,884	1,748,681,016		
53. Analysis of taxes accrued:				
53-01. U. S. Government taxes.....	690,261,658	407,831,877		
53-02. Other than U. S. Government taxes.....	156,340,596	152,864,736		
54. Other unadjusted credits.....	282,437,953	254,317,994		

¹ Represents accruals, including the amount in default.

² Includes payments of principal of long-term debt (other than long-term debt in default) which becomes due within six months after close of month of report.

³ Includes obligations which mature not more than one year after date of issue.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

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National Flexo-4 journal lids are of malleable iron construction carefully designed to seal the front end of the box from dirt, and retain the oil. Each Flexo-4 lid offers 4 big advantages:

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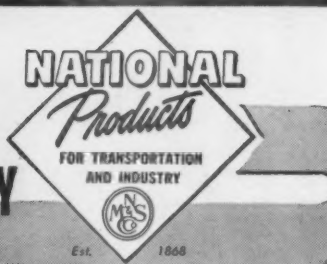
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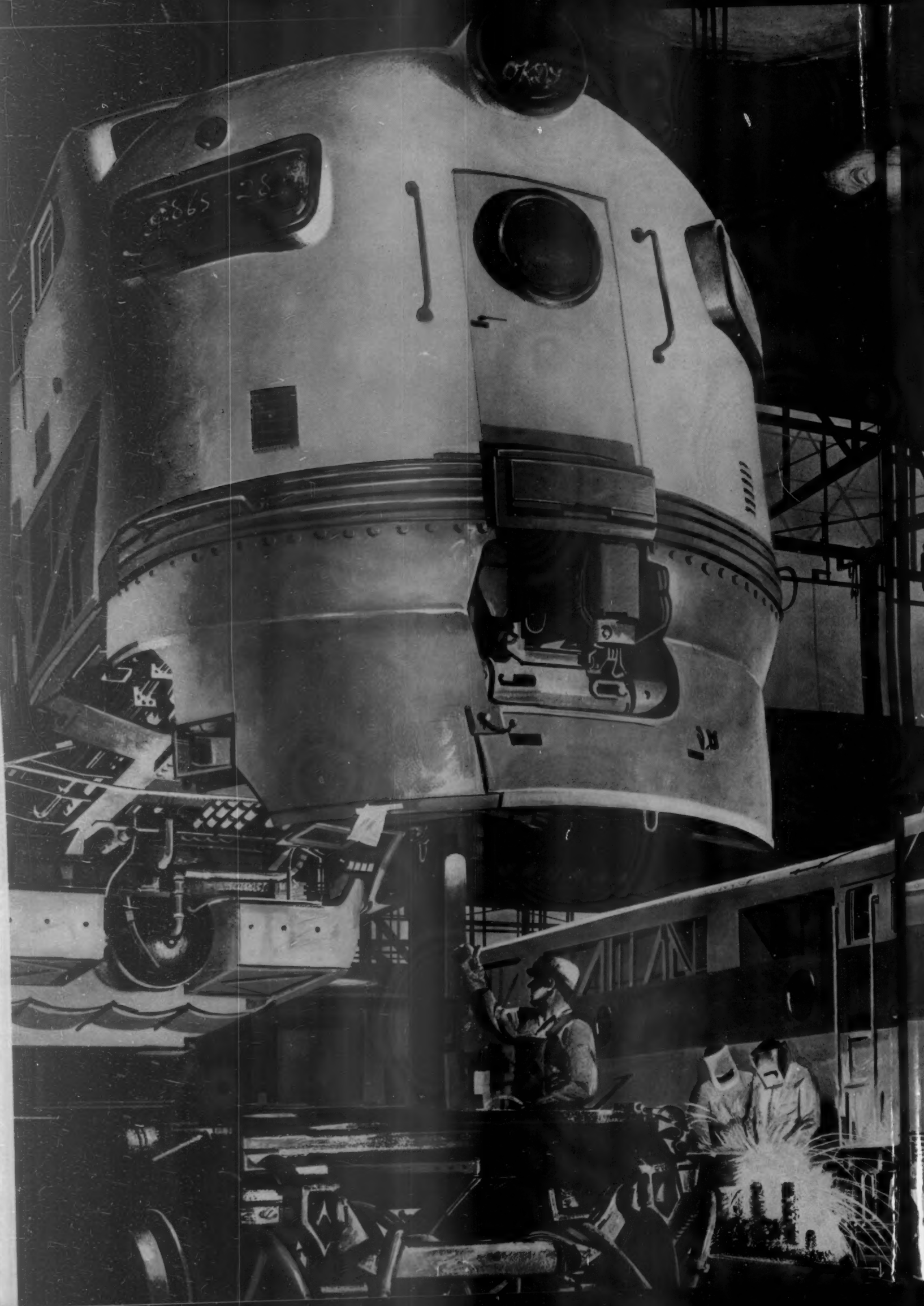
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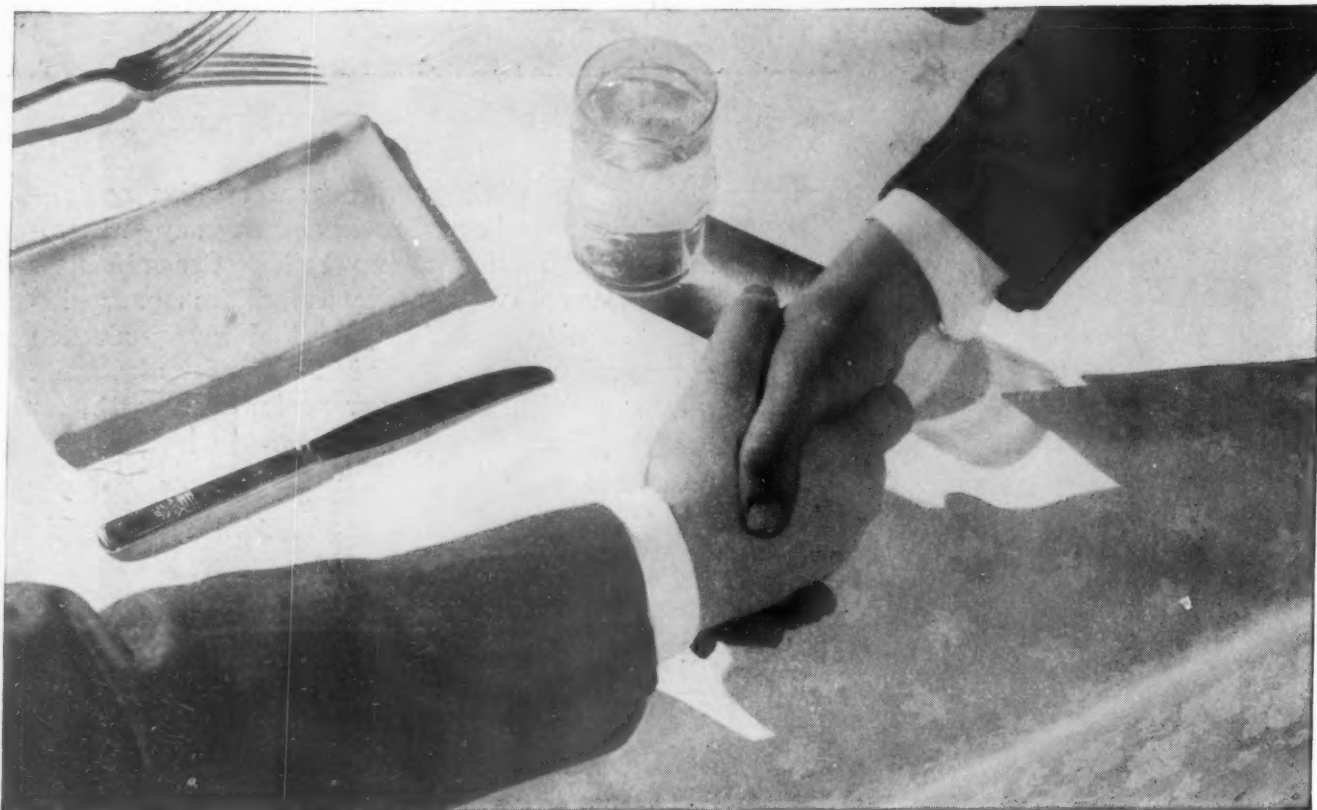
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(Continued from page 62)

trial Traffic Managers Association and the Women's Traffic & Transportation Club of Seattle, headed, respectively, by William D. Singer, assistant traffic manager of the Boeing Airplane Company, and Mrs. Kay Conger. Senator William F. Knowland, of California, has accepted an invitation to be the principal speaker at the convention dinner on September 25.

EQUIPMENT AND SUPPLIES

FREIGHT CARS

9,644 Freight Cars Delivered in June

June production of new domestic freight cars was maintained at substantially the same level as in May, deliveries during the month totaling 9,644, the American Railway Car Institute and the Association of American Railroads announced jointly on July 6.

"The 10,000-car-a-month program has been substantially achieved for the time being," the statement said. "But production will begin to slide in the fall unless present steel allocations and receipts are increased." June deliveries were 130 cars below the May figure of 9,774, but well above June 1950 deliveries of 3,874 cars.

Orders for 6,793 freight cars were placed in June, and the backlog of cars on order on July 1 was 147,725, compared with 150,628 on order June 1, 1951, and 40,585 on order July 1, 1950.

A breakdown of cars ordered and delivered in June, and of cars on order July 1, follows:

Type	Ordered June 1951	Delivered June 1951	On Order & Undelivered July 1, 1951
Box-Plain	3,182	3,745	49,219
Box-Auto	1,152	538	2,050
Flat	209	2,614	4,117
Gondola	550	1,363	29,239
Hopper	655	346	37,843
Covered Hopper	55	284	4,881
Refrigerator	500	...	7,049
Stock	390	623	1,000
Tank	100	62	10,881
Caboose	...	69	488
Other	...	...	958
TOTAL	6,793	9,644	147,725
Carbuilders	3,488	7,185	102,018
Railroad Shops	3,305	2,459	45,707

LOCOMOTIVES

The North Western Railway of Pakistan has ordered from the American Locomotive-General Electric Companies 23 diesel-electric locomotive units, including nine 1,600-hp. road-switchers and 14 1,600-hp. dual-purpose (freight-passenger) "A" road units. All the locomotives, which are scheduled for delivery late in 1951

and early in 1952, will be built to the Pakistan railway's 5-foot 6-inch gage.

SIGNALING

Clinchfield forces are installing centralized traffic control on 138 miles of single track between Erwin, Tenn., and Spartanburg, S. C. The 7½-ft. style C control machine will be installed at Erwin division headquarters. In addition to code and carrier equipment, the installation includes style P-5 color-light signals, style M-23B dual-control electric switch machines, relays, rectifiers, and transformers, and style SL-21A electric switch locks and housing, which are being supplied by the Union Switch & Signal Co.

MARINE

The Chesapeake & Ohio has called for bids, returnable not later than August 9, for construction of one all-steel car float to carry loaded freight cars between Newport News, Va., and Norfolk, in addition to the four floats which the C. & O. now has in operation between the two cities. The new float will be 370 feet long, overall, with a beam of 52 feet, 9¾ inches, and a depth of 13 feet, 3½ inches. Its capacity will be 1,850 gross tons, or the equivalent of 27 or 28 loaded freight cars.

SUPPLY TRADE

The Worthington Pump & Machinery Corp. has appointed William J. Fleming as manager of its construction equipment sales division, with headquarters at Dunellen, N. J. The company also has announced that sales and engineering functions of the water treating section have been moved from Dunellen to its Harrison, N. J., plant.

The Pressed Steel Car Company has acquired the Chicago Steel Tank Company, including its two subsidiary companies, Steel Erectors, Inc., and Conduit Fittings Corporation. This latest acquisition brings to five the number of steel fabricating companies Pressed Steel Car has acquired since its product diversification program was begun 15 months ago.

The Babcock & Wilcox Co. has leased five entire floors, totaling approximately 120,000 sq. ft. of space, in the new Chrysler building east, New York, as new headquarters for its general office, presently located at 85 Liberty street. Sales offices of the Babcock & Wilcox Tube Co., a subsidiary, at 22 East 40th street, New York, also will be moved to the new location.

Robert Paxton, formerly vice-president in charge of manufacturing

policy for the General Electric Company, has been elected an executive vice-president, to succeed Hardage L. Andrews, who has retired after 41 years of service.

The Farr Company has completed a new main factory and office building in El Segundo, Cal. The company formerly was located on Southwest drive, Los Angeles.

Lem Adams, vice-president of Oxweld Railroad Service Company, a division of Union Carbide & Carbon Corp., has retired. Mr. Adams began his railroad career in 1908 with the



Lem Adams

Union Pacific. He advanced through various positions to that of chief engineer, which position he held at the time he resigned to join Oxweld in 1933.

OBITUARY

Arthur F. Pitkin, retired engineer for the American Locomotive Company, died on July 9 in his home at Northport, Long Island, N. Y. Mr. Pitkin was 69 years old.

ABANDONMENTS

Chicago & North Western.—The I.C.C. certificate authorizing this road to abandon its 17.8-mile line between Pelican Lake, Wis., and Crandon will now become effective July 17. The effective date of the certificate had been indefinitely postponed while the commission considered a motion for reconsideration filed by the city of Crandon. The motion was denied by a July 2 commission order which also fixed the certificate's effective date. (Railway Age, April 16, page 72, and May 14, page 110.)

Division 4 of the I.C.C. has authorized:

ATLANTIC COAST LINE.—To abandon a 1,326-foot trestle extending into Tampa bay near St. Petersburg, Fla.

CHICAGO & NORTH WESTERN.—To abandon a 7.5-mile line which extends from a point near Gillette, Wis., to Oconto Falls. No industries are

located on the line, and the application was based on contentions that the bridge traffic involved can be handled more efficiently over alternate routes.

COLORADO & SOUTHERN.—To abandon a 2.3-mile line from a point near Louisville, Colo., to Lafayette.

ERIE.—To abandon operation under trackage rights over 1.43 miles of Lehigh Valley tracks and use of the Lehigh's passenger station in Buffalo, N. Y. The authorization gives commission sanction to discontinuance by the Erie of all passenger-train service to and from Buffalo.

PACIFIC ELECTRIC.—To abandon various lines totaling 8.3 miles in length in Los Angeles, Cal., Alhambra, South Pasadena, and Pasadena. Motor coach service will be substituted for the abandoned rail service.

WINONA.—To abandon its entire line, from Warsaw, Ind., to New Paris, 18.5 miles; and to abandon operation over the Winona & Warsaw's 3.15-mile line between Winona Lake and Warsaw. The commission's report also authorized the W. & W. to abandon the latter line. The abandonments, which had been denied "without prejudice" in a previous commission report of July 14, 1950, are now authorized subject to conditions that will allow time for completion of arrangements to provide service by other railroads to Leesburg, Ind., and Warsaw industries now served exclusively by the lines involved.

CONSTRUCTION

S. P. Doing \$7.6 Million Of Construction Work

A total of 19 major projects are currently planned or in progress on the Southern Pacific. They represent a total investment of \$7,651,245. The largest single project is the new yard at Roseville, Cal. (*Railway Age*, March 26, page 64), the cost of which has now been placed at \$4,793,330, not including diesel servicing facilities (*Railway Age*, August 12, 1950), the additional cost of which has now reached \$1,141,678. The third unit of the diesel service facilities project includes completion of the remaining portion of the 130-foot by 276-foot diesel shop and the 75-foot by 131-foot stores building, plus a public address system, a 6,000-lb. lift truck, drop pit machinery, two 2-ton cranes and runways, track work, a 20-foot by 30-foot grinder building and a 10-ton crane and runway. Other projects include:

Trackage.—Construction at Sacramento, Cal., of 775 feet of track, switches and necessary signals as connection to the city's Yolo Port District, where deep water facilities are being provided at an ultimate overall cost of \$22.5 million; construction of industrial trackage at Elmhurst, Cal., to serve the Berkeley Hardwood Company—\$36,495; rearrangement of present tracks and construction of additional tracks at Stockton to serve the American Can Company—\$49,070; construction of industrial trackage at Downey, Cal., and Norwalk to serve Kirkhill, Inc., and Master Processing Corporation—\$33,715; extension of sidings on "East Side" line between Lathrop, Cal., and Biola Junction to permit operation of 99-car trains—\$43,125; construction of industrial trackage at Mulford, Cal., to serve the Raymond Concrete Pile Company—\$29,505; construction of industrial trackage at Spreckels Junction, Cal., to serve the Vacuum Cooling Company—\$31,430; construction of industrial trackage at Clackamas, Ore., to serve Safeway Stores—\$85,770; extension of spur and its rebuilding as siding at Pittsburg, Cal.—\$21,610; construction of industrial trackage to serve Aluminum Products Company, Melrose, Cal.—\$25,950; rearrangement of tracks for construction of Oakland-San Francisco Bay Bridge and Bay Shore Freeway in the vicinity of 10th and Brannon streets, San Francisco—\$243,460. [The railroad's portion of this project includes construction of 4,310 feet of track, realignment of 1,000 feet and removal of 6,384 feet of present track. Flashing signals and interlocking facilities account for nearly \$120,000 of the total cost, which is reimbursable by the state of California]; construction of industrial trackage at

South Fresno—an initial step in serving some 116 acres of industrial property—including 4,027 feet of drill track and two spurs to Producers Cullen Company and others—\$53,425; and rearrangement of trackage at Montalvo (in connection with construction of a freeway leading to Los Angeles) including reconstruction of 7,166 feet and removal of 5,162 feet of main line track. An additional 1,254 feet is to be built and 1,910 feet to be shifted. The total cost, \$329,185, includes \$100,620 for roadways, drainage, trestle and culverts, and \$37,150 for signal protection and flashing lights at intersections collectable from the state of California.

Signal Respacing.—In conformity with I.C.C. requirements, signals are being respaced and, where necessary, converted to searchlight type. The 1951 program includes the following individual projects at a total cost of \$655,000: Casmalia, Cal., to Surf, 15.2 miles—\$50,985; Roberto, Cal., to Redding, 42.0 miles—\$52,005; Toitec, Ariz., to Ocotilla—\$21,275; Arizona-New Mexico state line to Pratt, N.M., 14 miles—\$18,420; Santa Barbara, Cal., to Montalvo, 32 miles—\$138,425; Biola Junction to Goshen Junction, 40 miles—\$136,340; and Arabella, N.M., to Santa Rosa, 11 miles—\$19,775.

Miscellaneous.—Cement block repair shop and garage, 80 feet by 126 feet, for Pacific Motor Truck Company, S. P. subsidiary, at San Francisco—\$92,400; paving, trackwork and flashing light protection at Martinez in connection with the opening of a crossing at Pine Street and the closing of Ferry Street crossing—\$29,055; construction of a master mechanic's office and diesel laboratory building at Roseville—\$41,380; and installation of a 150-ton track scale in a 70-foot pit at West Oakland to retire a present 100-ton scale with a 50-foot pit—\$37,270.

A proposal to enlarge standby power facilities at the Los Angeles Union Passenger Terminal for air conditioning and battery charging on passenger platforms is being studied; the total cost will be divided between the Santa Fe, the Union Pacific and the S.P.—the latter's share being set at \$72,922.

At Roseville, the T. M. Page Corporation, Monrovia, Cal., has a contract for grading and construction of a portion of the retarder yard roadbed, at \$31,050. The remainder of this work was done under another contract with Morrison-Knudson Company, at \$83,719. The A. M. Hardy Company of San Francisco is constructing the Pacific Motor Trucking Company garage. A contract was awarded to Baker & Pollack & Gridley Construction Co., Ventura, to construct subgrade, culverts, approach roadways and drainage ditches in connection with the Los Angeles freeway project. Almost all the other work will be undertaken by company forces.

Missouri-Kansas-Texas.—Land has been acquired in the vicinity of Garland, Tex., just outside of Dallas. It will be used for a freight yard development for which plans have not yet been completed.

Missouri Pacific.—Improvements representing an expenditure of \$2,910,000 are currently in progress or will be started shortly. In North Little Rock, Ark., and Little Rock, additional yard tracks, a yard office, a track scale, floodlighting and additional communications and air testing lines are being installed in Locust Street yard. An NX interlocking plant and C.T.C. equipment is also being installed and signals are being rearranged on Union Station tracks. Grading work is being performed by Porter-DeWitt Construction Company of Poplar Bluff, Mo., and the balance of the work by company forces at a

total cost of \$865,000. At a cost of \$285,000 eight sidings are being extended and equipped with power operated switches between Iron Mountain, Mo., and Cliff Cave. Grading work on these sidings plus a change of alignment at Irondale, Mo., is being performed by Porter-DeWitt and the balance by company forces. An additional 25 miles of C.T.C. is being installed between Poplar Bluff, Mo., and Dexter, with two sidings being extended and three equipped with power switches, at a total cost of \$310,000. Additional land is being acquired on which outside diesel servicing facilities and a diesel maintenance and repair shop are to be constructed, at a cost of \$394,000. Curvature at Glen Park, Mo., is being reduced at an estimated cost of \$158,000, with grading being done by Porter-DeWitt and the balance of the work by company forces. At Tower Grove Junction (St. Louis) a running track is being provided at Grand avenue to connect with the Oak Hill subdivision to facilitate industrial switching, the cost being estimated at \$131,000. Grading will be done by Samuel Kraus Company, St. Louis, and all other work by company forces. A 71-mile extension of C.T.C. between Cliff Cave and Bismarck, Mo., is being installed by company forces at a cost of \$411,500. At Corning, Ark., the E. E. Barber Construction Company of Fort Smith is grading for a curvature reduction, with the remainder of the work being undertaken by company forces at a total estimated cost of \$26,000. System bridge gangs are reconstructing bridges at Corning, Pollock, La., Woodworth, Gypsum, Kan., and Chivington, Colo., at a total cost of \$221,500. Diesel oil storage facilities are being installed at Kansas City, Mo., by the Darby Corporation of that city and company forces. Darby forces will dismantle a tank at McGehee, Ark., and re-erect it at the Kansas City site. The project will cost about \$66,000. In overflow territory at Ashby, Okla., track is being raised and an additional bridge is being constructed, with grading work being done by E. E. Barber Construction Company and the balance by company forces. The total cost is \$42,000.

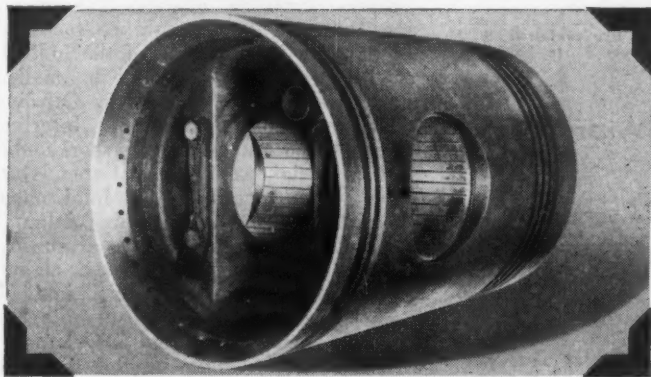
Missouri Pacific.—This road has applied to the I.C.C. for approval of plans for relocation of tracks connecting its Twelfth Street and Lesperance Street yards in St. Louis, to make way for highway and park improvements. The application put the estimated cost of the relocation at \$1,240,000, of which \$280,000 would be paid by the M.P., \$93,332 by the Terminal Railroad Association of St. Louis, \$641,760 by the Missouri State Highway Commission, and \$225,000 by the city.

St. Louis-San Francisco.—A storeroom building for the diesel house at Springfield (Mo.) shops is currently being constructed by company forces at an estimated cost of \$139,000.

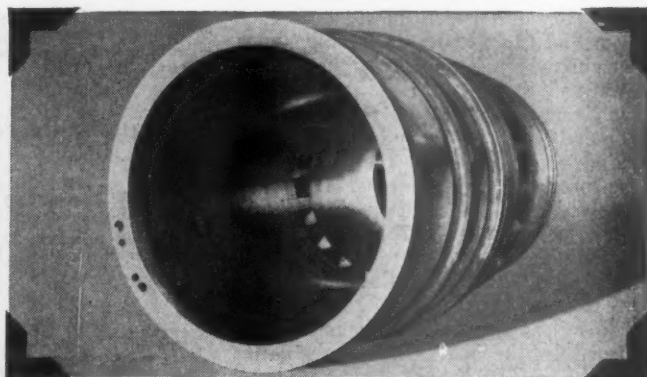
STANDARD ENGINEER'S REPORT

DATA	
LUBRICANT	RPM DeLo Oil R.R.
UNIT	Diesel Locomotive cylinder assembly
SERVICE	Mountain Freight
LOCATION	Transcontinental freight service on Moffat tunnel + Royal Gorge Routes
PERIOD	In excess of 8 years
FIRM	Denver & Rio Grande Western R.R.

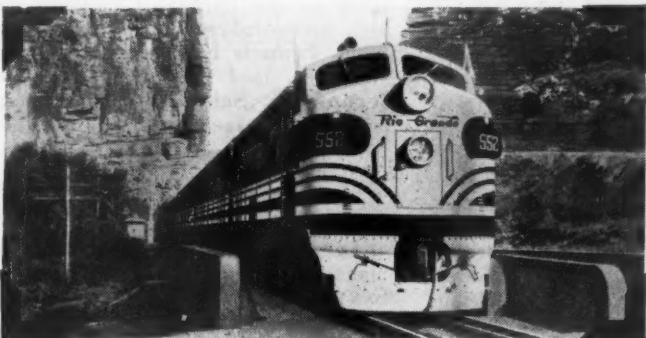
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measurements (inches) were only: Piston Skirt—0.001; Ring Grooves—No. 1—0.003 to 0.006, No. 2—0.002, No. 3 & 4—none; Cylinder liner (maximum diameter)—0.0095, (out of round)—0.002 to 0.004.

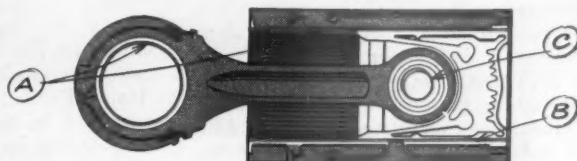


RPM DELO Oil R.R. has been the standard on the Denver & Rio Grande Western Railroad for over-the-road freight and passenger locomotives since their first power of this type was placed in service in January 1942. At the time this inspection was made approximately 49,563,104 miles had been traversed by the Rio Grande freight diesel fleet of 100 units and during that period only 77 cylinder liners had been scrapped for any reason. At that time many of the original pistons and cylinder liners were still in service and the average age of all these assemblies, including recently purchased power, was 4.7 years.

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- Special additive provides metal-adhesion qualities... keeps oil on parts whether hot or cold, running or idle.
- Anti-oxidant resists deterioration of oil and formation of lacquer... prevents ring-sticking. Detergent keeps parts clean... helps prevent scuffing of cylinder walls.
- Special compounds stop corrosion of any bushings or bearing metals and foaming in crankcase.

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FINANCIAL

Atchison, Topeka & Santa Fe.—*Division of Stock.*—This road's plan to split its common and preferred stock on two-for-one basis has been approved by the I.C.C. The plan provides for issuance of 4,855,190 shares of common and 2,629,720 shares of preferred, both of \$50 par value, to be exchanged for 2,427,595 shares of common and 1,314,860 shares of preferred, both of \$100 par value. (*Railway Age*, June 18, page 70.)

Gulf, Colorado & Santa Fe-Texas & New Orleans.—*Trackage Rights.*—These roads have asked the I.C.C. for authority to increase charges from \$1.10 to \$1.50 a train-mile under certain existing trackage rights agreements. They asked that approval of the increase be made retroactive to September 1, 1948, and cited higher maintenance costs as the reason for the proposed new charges. The lines involved are as follows: Rosenberg, Tex., to Houston, 31.7 miles; Guy to Rosenberg, 15.3 miles; Rosenberg to Virginia Point, near Galveston, 59.8 miles; and Newgulf to Thompsons, 27.5 miles. The first two segments are owned by the T.N.O., and the latter two by G.C.&S.F.

Long Island.—*Reorganization.*—Division 4 of the I.C.C. has approved an allowance of \$35,000 to be paid Cullen & Dykman for services rendered as counsel for this road's former trustees during the period from May 6, 1949, to December 22, 1950.

Mobile & Birmingham.—*Bond Extension.*—The I.C.C. has authorized this road to extend the maturity date of its prior lien, 5 per cent bonds, and its first mortgage, 4 per cent bonds. The bonds, most of which are owned by the Southern, lessee of the M.&B., are outstanding in amounts of \$600,000 and \$1,200,000, respectively. Both issues matured July 1, 1945, and will now be extended until March 1, 1998.

New Securities

Application has been filed with the I.C.C. by:

EAST BROAD TOP MOUNTAIN.—To refund its present outstanding bonds by issuing \$1,000,000 of new first and refunding mortgage bonds. The new bonds would be delivered to the Rockhill Coal Company, which holds all the present bonds and owns all the stock of the line. This refunding would reduce the road's bonded indebtedness by \$56,900, and would reduce annual interest payments. The new bonds, to be dated January 1, 1951, would bear interest at 6 per cent, and would mature January 1, 1958.

Division 4 of the I.C.C. has **authorized:**

PENNSYLVANIA-READING SEASHORE LINES.—To issue a note or notes in the principal amount of \$1,926,000 to evidence a bank loan obtained to pay a like amount of 4 per cent, first consolidated mortgage bonds of its predecessor, the Atlantic City, which became due July 1. The bank loan was obtained from the Irving Trust Company, and the note or notes will bear interest at the annual rate of 2½ per cent. They will

be dated June 29 and will mature May 1, 1954. (*Railway Age*, June 18, page 72.)

ST. LOUIS SOUTHWESTERN.—To issue \$9,000,000 of 2½ per cent, collateral trust bonds. Together with \$2,482,250 in cash, the bonds will be delivered to the Southern Pacific in payment of a note for \$11,482,250. The note represents the unpaid balance of a debt resulting from assumption by the S.P. of a Cotton Belt debt to the Reconstruction Finance Corporation. The new bonds will mature in annual installments of \$1,000,000 each, beginning July 1, 1953, with a final installment of \$2,000,000 due July 1, 1960.

WESTERN MARYLAND.—To assume liability for \$3,540,000 of series P equipment trust certificates to finance in part acquisition of 710 freight cars (*Railway Age*, June 25, page 110). The certificates, bearing interest at 3 per cent, will mature in 15 annual installments of \$236,000 each, beginning July 1, 1952. The commission's report approved sale of the certificates at 99.52466—the bid of Halsey, Stuart & Co. and five associates, which will make the average annual cost 3.1 per cent. The certificates were reoffered to the public at prices yielding from 2.35 to 3.05 per cent, according to maturity.

Dividends Declared

Cleveland, Cincinnati, Chicago & St. Louis.—common, \$5, semiannual; 5% preferred, \$1.25 quarterly, both payable July 31 to holders of record July 13.

Security Price Averages

	July 10	Previous week	Last year
Average price of 20 representative railway stocks	50.25	49.50	40.65
Average price of 20 representative railway bonds	91.45	91.42	90.00

RAILWAY OFFICERS

EXECUTIVE

Edward W. Englebright, assistant to president of the WESTERN PACIFIC, at San Francisco, has retired. A native of Oakland, Cal., and a 1909 civil engineering graduate of the University of California, Mr. Englebright began his railroad career with the Southern Pacific at Dunsmuir, Cal., as assistant engineer, later served on the Union Pacific, and for seven years was engaged in development of a locomotive stoker business, which he sold in 1928 to join the W. P. as consulting engineer. In 1944 he was advanced to assistant to president. Mr. Englebright's post-retirement plans will take him shortly to Mozambique, Africa, on an E.C.A. assignment for the Portuguese government in connection with expansion of the colony's railroads.

E. A. Sweeley, assistant to president of the FRUIT GROWERS EXPRESS, the WESTERN FRUIT EXPRESS and the BURLINGTON REFRIGERATOR EXPRESS, at Washington, D. C., retired on July 1, after more than 49 years of railroad and refrigerator car line service. Mr. Sweeley's railroad service began with the New York Central in 1902, and he subsequently served in an official capacity with a number of roads, including the Atlantic Coast Line and the Seaboard Air Line. He was a member of the Railroad Adjustment Board under the U. S. Railroad Administration (1918-1920), and became

mechanical superintendent of F. G. E. in May 1920. Mr. Sweeley was appointed general mechanical superintendent in May 1947 and was advanced to assistant to president on July 1, 1950.

FINANCIAL, LEGAL & ACCOUNTING

In connection with the leasing by the CAROLINA & NORTHWESTERN of the BLUE RIDGE, the DANVILLE & WESTERN, the HIGH POINT, RANDLEMAN, ASHEBORO & SOUTHERN, and the YADKIN (*Railway Age*, July 2, page 84), all bills, reports and summaries of interline freight, per diem, freight claims and all other accounts with those companies, covering business subsequent to June 30, 1951, should be rendered separately in the name of the individual companies but should be mailed to appropriate officers of the Carolina & Northwestern, as follows: Interline freight accounts—Noah Garner, auditor of freight accounts, Atlanta, Ga.; per diem accounts—F. I. Umhau, superintendent car records, Atlanta; overcharge claims, B. R. Humrickhouse, auditor of overcharge claims, Atlanta; loss and damage claims, M. M. Barber, general freight claim agent, Chattanooga, Tenn.; and miscellaneous bills, Chester Quinn, auditor, Hickory, N. C. Drafts should be drawn on and remittances made to the treasurer at Washington, D. C.

David A. Lerch, land and tax agent of the ERIE at Cleveland, has been appointed general land and tax agent. **Francis F. Buehler** has been appointed land and tax agent and **Jerome N. Schmidt** has been appointed land agent.

OPERATING

L. M. Olson, assistant general manager of the ATCHISON, TOPEKA & SANTA FE at La Junta, Colo., has been appointed acting assistant to vice-president—operations, at Chicago, replacing **J. N. Landreth**, who is on temporary leave. **E. E. Foulks**, superintendent transportation at Chicago, succeeds Mr. Olson. **J. P. Spears**, trainmaster at Clovis, N. M., has been appointed assistant superintendent at El Paso, Tex., succeeding the late **Noah Bridges**. Transferred to succeed Mr. Spears is **T. W. Goolsby**, trainmaster at Dodge City, Kan., who is in turn replaced by **F. L. Elterman**.

Thomas A. Jerrow, who was recently promoted to general manager, lines east of Williston, N. D., of the GREAT NORTHERN at Duluth (*Railway Age*, May 28), was born at Kila, Mont. He started with the G. N. in his home town in 1924 as a section laborer. Appointed trainmaster in 1937, he held that position at various points until

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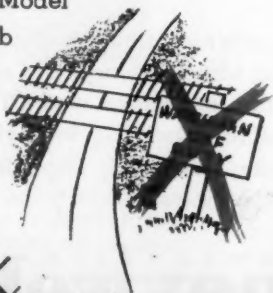


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1942 when he became a captain in the Army Transportation Corps. Following his return to the G.N. in 1944, he served as trainmaster at Spokane, Wash., and in 1945 became superin-



Thomas A. Jerrow

tendent at Klamath Falls, Ore. In June 1947 he moved to Grand Forks, N. D., as superintendent, continuing in that capacity until his recent promotion.

As reported in *Railway Age* May 14, **H. B. Smith** has been appointed assistant general superintendent of the Western general division of the NORFOLK & WESTERN at Bluefield, W. Va. Mr. Smith joined the N. & W. in June 1920 as a telegraph operator on the Pocahontas division and subsequently served as train dispatcher, assistant yardmaster, yardmaster and assistant



H. B. Smith

trainmaster. In December 1940 he was promoted to trainmaster on the Pocahontas division, advancing to assistant superintendent of the Radford division in April 1941. Mr. Smith was appointed superintendent of the Pocahontas division in February 1942, which position he held until his recent promotion.

R. W. Heron, assistant superintendent of the CHICAGO & NORTH WESTERN's Wisconsin division, has

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been promoted to superintendent of the Madison division, succeeding the late **Walter S. Alcumbrac**, whose death was reported in the July 2 *Railway Age*.

George C. Vaughan, division engineer of the PENNSYLVANIA at Pittsburgh, has been appointed assistant superintendent of the Southwestern division, with headquarters at Indianapolis, to succeed **Lewis A. Evans**, who has resigned to become vice-president and general manager of the Belt of Chicago and the Chicago & Western Indiana (*Railway Age*, June 25).

H. B. Parr, associate manager of the sleeping, dining and parlor car department of the CANADIAN NATIONAL, has been appointed general manager at Montreal. **W. A. McDonald**, general superintendent of that department at Winnipeg, has been appointed assistant general manager at Montreal. **H. A. Simons** has been appointed assistant to the general manager, also at Montreal. **U. J. Mangan**, superintendent at Edmonton, Alta, has been appointed general superintendent of the department at Winnipeg.

J. J. Quinn, superintendent of the Southwestern Ontario division of CANADIAN NATIONAL EXPRESS, has been appointed general superintendent of the Central district at Toronto, succeeding **S. O. Martin**, who has retired under the pension rules of the company, after more than 42 years of express service. **A. I. Craig**, terminal agent, succeeds Mr. Quinn, with headquarters as before at Toronto.

"To increase efficiency through enabling supervisors to familiarize themselves with the varied conditions existing on an 11,000-mile system," the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC has announced the following appointments and changes in assignments of 25 operating department officers, effective July 16: **F. R. Doud**, division superintendent, as assistant general superintendent, a new post, with headquarters remaining at Madison, Wis.; **A. J. Farnham**, superintendent at Terre Haute, Ind., as Mr. Doud's successor; **G. F. Wilson**, assistant superintendent at Bensenville, Ill., as superintendent at Minneapolis, succeeding **W. E. Swingle**, transferred to succeed Mr. Farnham; **J. T. Hansen**, superintendent at Miles City, Mont., as successor to **A. O. Thor**, superintendent at Tacoma, Wash., who moves to Spokane; **J. T. Hayes**, assistant superintendent at Green Bay, Wis., as Mr. Hansen's successor; **M. T. Sevedge**, assistant superintendent at Milwaukee, as Mr. Hayes' successor; **R. R. Brown**, trainmaster at Austin, Minn., as assistant superintendent at Milwaukee, replacing Mr. Sevedge; **G. W. Riley**, trainmaster at LaCrosse, Wis., as successor to Mr. Brown; **J. D. Shea**, assistant superintendent at Sioux City, Iowa, as assistant superintendent at

Perry, Iowa, succeeding **W. T. Stewart**, who becomes Mr. Wilson's successor at Bensenville; **R. F. Fairfield**, trainmaster at Milwaukee, as Mr. Shea's successor; **F. E. Devlin**, assistant superintendent at Lewistown, Mont., as assistant superintendent at LaCrosse; **J. O'Dore**, as assistant superintendent, succeeding Mr. Devlin; **W. F. Plattenberger**, trainmaster at Terre Haute, as trainmaster at St. Paul, succeeding **W. T. Hjorth**, transferred to Marion, Iowa, to replace **L. V. Anderson**, who becomes special representative to vice-president—operations at Chicago; **Martin Garelick** and **R. H. Jensen**, assistants to general manager at Chicago, as trainmasters at Terre Haute and Milwaukee, respectively; and **L. H. Walleen**, trainmaster at Davenport, Iowa, as trainmaster at St. Maries, Idaho, succeeding **J. J. Nentl**, transferred to Aberdeen, S. D., to replace **R. W. Riedl**, who in turn becomes trainmaster at Portage, Wis., to succeed **T. E. Witt**, appointed as **G. J. Barry**'s successor at Milwaukee. Mr. Barry succeeds Mr. Walleen.

Gordon Skelding, superintendent of transportation for the CANADIAN NATIONAL's Alberta district, at Edmonton, has retired after having served that road and its predecessor, the Canadian Northern, for more than 50 years. Promoted to succeed Mr. Skelding is **Walter McPherson**, transportation assistant at Winnipeg. Mr. Skelding was born at Neepawa, Man., July 2, 1886, and went to Winnipeg to begin his railroad career in June 1901 as an operator. He later served as dispatcher and chief dispatcher and in 1937 became superintendent of transportation at Winnipeg, being transferred to Edmonton in 1944.

J. W. Hall, Jr., assistant trainmaster of the RICHMOND, FREDERICKSBURG & POTOMAC, has been appointed trainmaster at Richmond, Va., succeeding **B. L. Jones, Sr.**, who has retired at his own request, after more than 52 years of service with this company.

TRAFFIC

Ernest G. Howard, assistant general freight agent of the NEW YORK CENTRAL SYSTEM at Toledo, has been transferred to Cleveland, succeeding **A. J. Crookshank**, whose appointment as assistant to the general freight traffic manager at New York was reported in *Railway Age* May 7. **James L. Robinson**, chief clerk of the freight traffic department at Cleveland, succeeds Mr. Howard as assistant general freight agent at Toledo.

O. R. Smith, general freight agent of the ST. LOUIS SOUTHWESTERN, has been appointed assistant freight traffic manager, with headquarters remaining at Tyler, Tex. His former post has been abolished. Born on

January 21, 1899, at Greenwood, Ark., Mr. Smith attended Tyler Commercial College, and started with the Cotton Belt in February 1917 in the traffic department at Tyler. Subsequently he held various positions, including assistant to general freight agent and assistant general freight agent, until his promotion to general freight agent in 1940.

John L. Cahoon, district freight agent of the SOUTHERN, has been appointed division freight agent, with headquarters as before at Sheffield, Ala. **Joe E. Todd**, commercial agent at Memphis, succeeds Mr. Cahoon as district freight agent at Sheffield.

W. E. Callender, freight traffic manager of the CHICAGO & EASTERN ILLINOIS, at Chicago, has been appointed general freight traffic manager. **D. F. Woods**, acting freight traffic manager, becomes freight traffic manager, his former position being abolished.

F. B. Kveton has been appointed general agent for the MISSOURI PACIFIC LINES at Galveston, Tex., succeeding **E. M. Weinberger**, who has retired after more than 43 years' service.

The ST. LOUIS SOUTHWESTERN has announced the appointments of **Walter G. Degelow**, traffic manager, as assistant general traffic manager, and of **H. Clarke Roberts**, general freight agent, and **W. A. Feldmann**, assistant general freight agent, as freight traffic managers. Mr. Roberts will henceforth have charge of all freight solicitation activities, while Mr. Feldmann will supervise all rate matters. Other changes in the Cotton Belt's traffic department include the appointments of **C. J. Dinkelkamp**, former general freight agent, as assistant freight traffic manager for solicitation; of **G. W. Heuermann**, former assistant to traffic manager, as assistant general freight agent; and of **C. H. Jacques** and **A. J. Maloney**, former assistant general freight agents, as general freight agents. Messrs. Maloney and Heuermann will supervise office work in connection with solicitation, while Mr. Jacques will handle rate legislation work.

These promotions mark a change in the organization of the Cotton Belt's traffic department, which, since 1932, has been organized along commodity lines, with sections responsible for both rates and solicitation of various groups of commodities. Now the department has been returned to its original pattern of operation, with a complete separation of rate and solicitation activities.

W. M. Jamieson, general freight agent of the CANADIAN PACIFIC's Prairie region at Winnipeg, has been promoted to assistant freight traffic manager for the same territory, while **T. Hooks**, general foreign freight

agent at Vancouver, B. C., has been advanced to a similar post for the Pacific region. Mr. Jamieson succeeds **Jack Fullerton**, promoted to freight traffic manager at Toronto (*Railway Age*, June 25), and Mr. Hooks replaces **K. M. Fetterly**, appointed foreign freight traffic manager at Montreal (*Railway Age*, July 2). **J. N. McPherson**, general freight agent at Vancouver, succeeds Mr. Jamieson, and is in turn succeeded by **V. R. Duncan**, division freight agent at Calgary. Succeeding Mr. Duncan is **N. F. Cowie**, division freight agent at Winnipeg. **C. S. Doupe**, district freight agent at Edmonton, becomes Mr. Cowie's successor, and is in turn succeeded by **T. H. Johnson**, traveling freight agent at Regina.

Mr. Jamieson is a native of North Bay, Ont., and started with the C. P. at Toronto in 1912. In 1941 he was transferred to Montreal, where he served as chief of tariff and division bureau for seven years and later as assistant general freight agent for a year before moving to Winnipeg in 1949.

Mr. Duncan began his career with the C. P. in 1917 at Victoria, B. C. After holding a number of positions, he became district freight agent at Edmonton in 1944. In 1948 he was transferred to Calgary as division freight agent.

Everett S. Leavitt, general agent for the SOUTHERN PACIFIC LINES at Boston, has retired after almost 49 years' service. He is succeeded by **T. J. Lucey**.

H. C. Shirer, formerly general agent for the CHICAGO GREAT WESTERN, has been appointed division freight agent, with headquarters continuing at Des Moines, Iowa.

D. G. Payne, assistant general passenger agent of the CHICAGO & NORTH WESTERN at Chicago, has been promoted to general agent at Detroit, succeeding **C. R. Bair**, who becomes general freight and passenger agent at Green Bay, Wis.

ENGINEERING AND SIGNALING

John C. Jacobs, former assistant engineer maintenance of way, has been appointed engineer maintenance of way for the entire ILLINOIS CENTRAL system. He succeeds **Charles M. Chumley**, whose retirement was recorded in *Railway Age*, July 2, page 93. Mr. Jacobs was born at Amboy, Ill., in 1892 and, after attending the University of Illinois, entered the service of the I.C. as a chainman in a surveying party in Alabama. He served in various capacities on the Memphis, St. Louis, Chicago Terminal and former Wisconsin divisions until 1936, when he was appointed acting supervisor of track on the Springfield division. The following year he was



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transferred to the Peoria district as supervisor of trains and tracks. In 1942 and 1943 he served as supervisor of track at East St. Louis, Ill., and in June of the latter year became division engineer of the Mississippi division. In March 1948 he was promoted to acting assistant engineer maintenance of way at Memphis, and seven months later was given those duties as a regular assignment. He was subsequently transferred to Chicago in the same capacity and it was from this position that he was appointed to succeed Mr. Chumley.

V. C. Blackett, assistant engineer of the CANADIAN NATIONAL at Moncton, N. B., has retired on pension after 37 years of service.

R. W. Riser, division engineer of the PENNSYLVANIA's Cincinnati division, has been transferred in the same capacity to the Fort Wayne division. **W. N. Myers**, division engineer, PRSL-Atlantic division, becomes Mr. Riser's successor.

OBITUARY

Daniel W. Corcoran, who retired in 1945 as general storekeeper of the CHICAGO & NORTH WESTERN, died on July 1 in Bethany Hospital, Chicago.

Walter S. Alcumbrac, late superintendent of the CHICAGO & NORTH WESTERN's Madison division, whose death was reported in the July 2 *Railway Age*, was born on July 22, 1896, at Plainfield, Ill. Starting his career with the North Western in 1917 as a warehouseman at Woodstock, Ill., Mr. Alcumbrac later served in various capacities, including trainmaster and assistant superintendent, until his promotion in April 1942 to superintendent of the Dakota division. A year later he became superintendent of the Madison division.

Charles E. Johnston, who retired as president of the KANSAS CITY SOUTHERN in 1938, died July 9 at his home in La Jolla, Cal. He was 69 years old. Mr. Johnston also was former chairman of the ASSOCIATION OF WESTERN RAILWAYS.

As reported in the July 9 *Railway Age*, **James P. Leach**, assistant vice-president of the PULLMAN COMPANY, died June 27 in Chicago. A native of St. Louis, Mr. Leach started with Pullman in the St. Louis district in 1912, advanced through many positions, and in 1928 became district superintendent at Kansas City, later serving in that capacity at Los Angeles and New York. He came to Chicago as assistant vice-president in September 1945. During the past four years, his active leadership and participation in conductors' and porters' conferences was responsible, in a great degree, for the success of Pullman's service conference program, which was described in *Railway Age* March 4, 1950, page 42.

Current Publications

PERIODICAL ARTICLE

100 Years Old and What a Past. *Business Week*, May 19, 1951, pp. 44-53. McGraw-Hill Publishing Company, 330 W. 42nd st., New York 18. Single copies, 25 cents.

An account of the Erie's first century, with special emphasis on the parts Daniel Drew, Jim Fisk and Jay Gould played in its past.

BOOKS

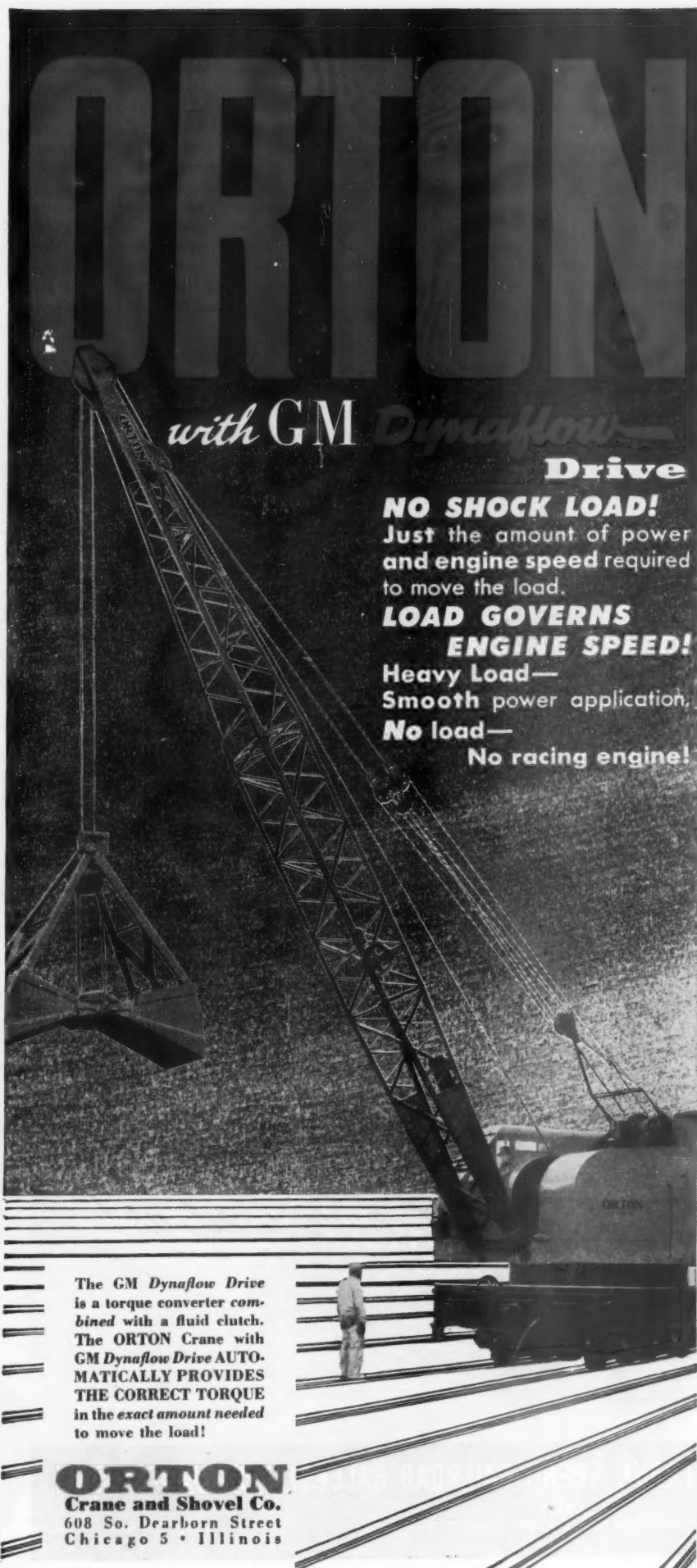
Transportation; Principles, Practices, Problems, by Charles E. Landon. 618 pages, tables, maps, graphs. William Sloane Associates, Inc., 119 W. 57th st., New York 19. \$4.75.

This book has been written after two decades of experience in teaching transportation to undergraduates. It is designed to meet the needs of an introductory course. The objective is to acquaint the student—and the business man and citizen as well—with the principles, practices and problems of transportation that prevail in the United States, and with the social and economic importance of transportation to the operation of our economic system. The treatment is not intended to be exhaustive. Numerous topics are discussed only briefly, with the hope that students who are interested will pursue those subjects further on their own initiative. The book is divided into six parts—general importance of transportation; organization and physical facilities for transportation; rates and their economic effects; the regulation of transportation; special transportation problems; and the future of transportation.

Russia's Soviet Economy, by Harry Schwartz. 592 pages, tables, maps. Prentice-Hall, Inc., 70 Fifth ave., New York 11. \$6.65.

This work is an attempt, in part, to meet the need for comprehensive and accurate information about the Soviet Union. It seeks to present a synthesis of available knowledge regarding all major sectors of the Soviet economy, particularly as regards their organization and operation. In addition, the first three chapters are concerned with the resources, historical and ideological backgrounds of this economy which seem indispensable for comprehension of the development under Soviet rule since 1917. In the preparation of this material, the intention throughout has been to present the most factual and accurate information available. In addition to the three chapters already mentioned, other chapters cover economic development; the national economic plan; organization and operation of industry; growth of industrial production; agriculture; transportation and communication; trade, housing and services; the financial system; hired and prison labor; and foreign economic relations.

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or *Damage in Transportation*, by Thomas G. Bagan. 500 pages. Wm. C. Brown Company, Dubuque, Iowa. \$6.50.

This book deals with the transfer of title to personal property from shipper to consignee and as to which of them has the risk of loss or damage incident to transportation. It treats of various types of sales, bailments and goods on consignment; the subject of time, place and manner of delivery is also discussed. The term F.O.B. and its many and varied applications are discussed throughout the book. Other chapters deal with the right of stoppage in transit for insolvency of

the buyer; who is the lawful holder of the bill of lading; who has the right to file a claim against the carrier; and when the claim must be filed or suit instituted. One chapter treats of export and import terms, such as C.I.F. and C. & F., and other terms employed in foreign commerce and their effect on transfer of title and risk. The book follows a certain pattern which it is believed will assist in understanding this involved subject. First, the terms and elements which are discussed in the particular chapter are defined; next are cases which illustrate the definitions; following that are cases which

illustrate risk of loss or damage under the particular type of contract; and finally, there is a conclusion at the close of each chapter setting forth, in brief, the salient points.

Diesel-Electric Locomotive Handbook, in two volumes, by George F. McGowan. *Mechanical Equipment*, 262 pages; *Electrical Equipment*, 290 pages, illustrations, diagrams, drawings. Simmons-Boardman Publishing Corporation, 30 Church st., New York 7. Each volume, \$4.95, the set, \$9.45.

These two books explain the development, construction, and operation of the diesel-electric locomotive. They have been written with the assumption that men who work on and operate these locomotives would like to know why they are built and operated in the manner they are, without having to wade through masses of technical details. The *Mechanical Equipment* volume covers development of the diesel-electric locomotive; fundamentals; lubricating and cooling; fuel systems; pistons, piston rings and liners; connecting rods, bearings and crankshafts; valves, timing and heads; governors; the steam generator; and the air compressor. It concludes with chapters on engines built by American Locomotive Company, Baldwin-Lima-Hamilton, Electro-Motive and Fairbanks-Morse. The *Electrical Equipment* volume covers the electric transmission; electrical fundamentals; the electric generator; the traction motor; exciters, auxiliary generators, motor blowers and dynamic braking; batteries and contactors; and concludes with chapters on the electrical equipment of the principal manufacturers.

PAMPHLETS

Economic Policies for National Defense; A Report of the Committee on Economic Policy. 36 pages. Economic Research Department, Chamber of Commerce of the United States, Washington 6, D. C. Single copies, 50 cents; quantity discount 25 per cent.

This report brings together a comprehensive analysis of the aims and economic requirements of our defense program. Essential policies for achieving these aims are outlined. Both the causal and the interrelated factors of our inflation problem are analyzed. The policies recommended are those considered most likely to have the desired remedial effect. Wage and price controls, and manpower and procurement policies, are discussed in detail. The report concludes with recommendations on major economic policies.

Impact Die Forging (commercially known as Drop Forging). Chambersburg-Engineering Company, Chambersburg, Pa. \$1.50.

This text is a revision of a course on principles of drop forging prepared several years ago by the Chambersburg Engineering Company with the cooperation of the School of Engineering of Princeton University. The material is divided into five main sections: why a drop forging; the drop hammer; design of a drop forging; the drop forging process; and drop forging manufacturing tolerances.

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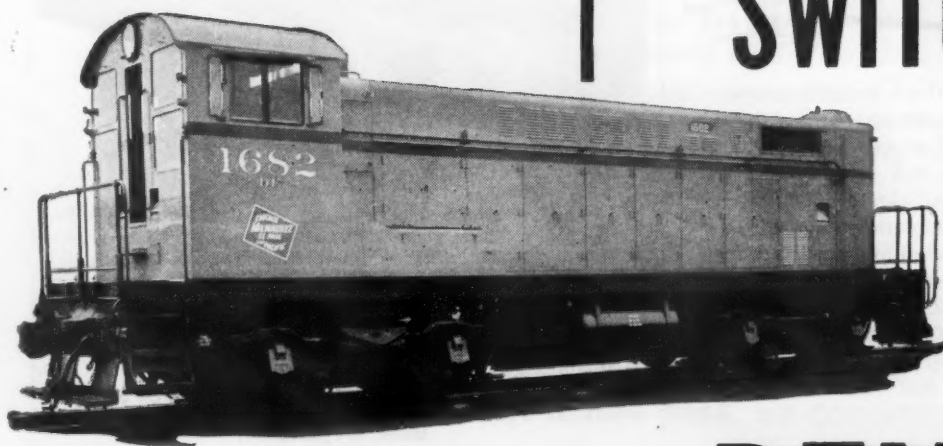
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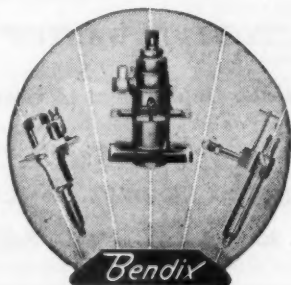
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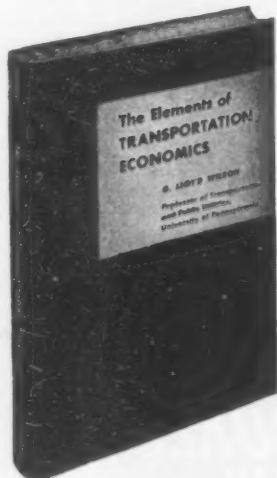


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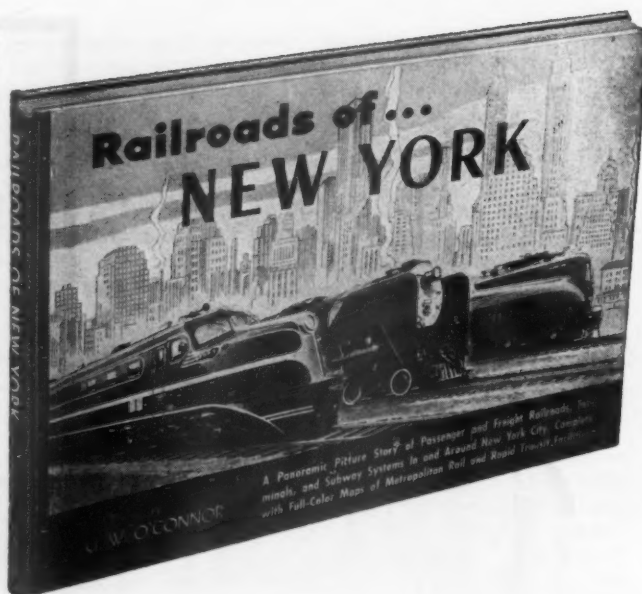
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